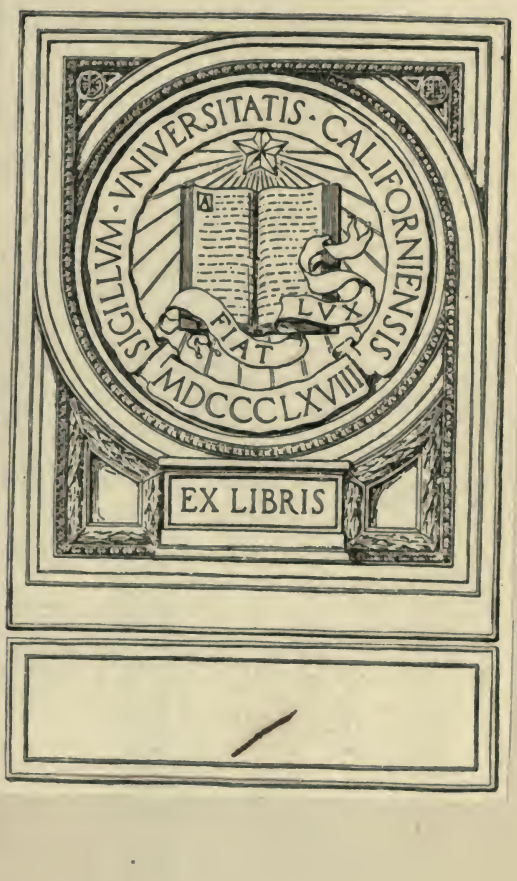



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THE ANNALS OF MONT BLANC

A MONOGRAPH





MONT BLANC FROM THE BREVENT. THE NORTHERN FACE.

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THE ANNALS OF MONT BLANC

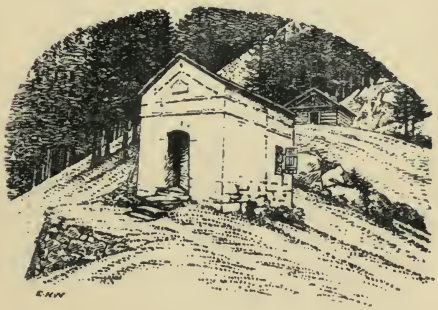
A MONOGRAPH

By

Charles Edward Mathews

Sometime President of the Alpine Club
(Membre honoraire du Club Alpin Français)

WITH A CHAPTER ON THE GEOLOGY OF THE MOUNTAIN, BY PROFESSOR T. G. BONNEY, D.Sc., LL.D., F.R.S.



BOSTON
L. C. PAGE AND COMPANY
1900

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To

MY FRIENDS AND COLLEAGUES OF THE ALPINE CLUB,

AND TO THE MEMORY OF THOSE

NOW GONE TO THEIR REST,

THIS BOOK

IS CORDIALLY AND

AFFECTIONATELY DEDICATED

250253

PREFACE

THIS book is in no sense a record of personal adventure. It is a History of Mont Blanc; and I have endeavoured to put together within the compass of one volume everything of interest which is known in connection with this famous mountain.

For a great number of years I have been a traveller in every part of the Alps. Every centre of mountaineering has its own peculiar charm, but I have found in the chain of Mont Blanc a constant and irresistible fascination. It has been my good fortune to have climbed the great mountain twelve times, and—irrespective of variations—by most of the different routes by which the summit can be attained. It is not unnatural, therefore, that I should have endeavoured to make myself acquainted with its traditions and its history; but here my difficulties began. No real history of the mountain for English readers exists. Its records are to be found in

isolated publications, most of them rare and difficult to obtain; in miscellaneous articles in English and Foreign magazines; and in the forgotten columns of the British and Continental press. For many years I have made the collection of these fugitive records the object of my peculiar care, and have succeeded in gathering together a mass of valuable material.

I am well aware that efforts have already been made to tell the public something at any rate of the story of the mountain. Albert Smith wrote "The Story of Mont Blanc" nearly fifty years ago; but his brochure *is to a great extent a record of his own ascent, is full of inaccuracies, and is now wholly out of date. Mr. Edward Whymper, a great authority on mountaineering in general and on the Alps in particular, has published "A Guide to Chamonix and Mont Blanc," which contains more accurate and valuable information on the subject of which it treats than is to be found in any similar publication. But interesting as this work is, it is a guide book rather than a history. M. Charles Durier, the President of the French Alpine Club, is the only man who has hitherto written a complete history of the mountain. I have endeavoured to the best of my ability to do for English readers—though on somewhat different lines —what M. Durier has already done so admirably for his countrymen.*

Preface

My task has been rendered less onerous owing to the courteous and kiudly assistance which I have received from many friends both at home and abroad, and which I desire heartily and gratefully to acknowledge.

Signor Vittorio Sella, well known not only as a mountaineer but as an artist, has been so obliging as to place all his photographs of Mont Blanc at my disposal, and has also been good enough to prepare five plates specially for Messrs. Swan & Company, who have executed the photogravures.

I have also to thank Mr. Eric Greenwood for his excellent photograph of the Dôme Route and the Aiguilles Grises. I am indebted for the loan of some rare books to M. Augerd of Bourg, M. T. de Saussure, M. J. Vallot, Mr. Henry Cockburn, and Lady Emily Peel. Professor Bonney, formerly President of the Royal Geological Society, has been good enough to supply a chapter on the geology of the mountain, and Mr. J. Ashby Sterry has allowed me to reproduce a fine portrait of Albert Smith. Adolphe Balmat has supplied me with the manuscript diary, hitherto unknown, written by his celebrated great grandfather, Dr. Paccard; and M. J. P. Cachat, of Chamonix, has placed at my service a rare portrait of the Doctor which is in his possession.

I have received much valuable information and

assistance from M. Gabriel Loppè, M. Albert Barbey, M. T. Dufour, and M. Louis Kurz. Also from Professor Sonnenschein, Mr. C. T. Dent, Mr. Henry Pasteur, Dr. Garnett (of the British Museum), and others. M. Durier has not only allowed me the use of his map, but has given me from time to time information, sympathy, and encouragement; and the Rev. H. B. George, Mr. D. W. Freshfield, and Mr. G. H. Morse have taken infinite pains in verifying the details of my story, and in correcting its pages for the Press.

I have been advised and have determined to give ample particulars of the various ascents of the mountain from the time of Paccard and Balmat (1786), when it was first climbed, down to the time of Albert Smith (1851), when the ascent became fashionable. Readers who are mountaineers will be glad to have these details; and those who are not, will I hope pardon what may seem to be unnecessary repetition.

My first attempt on Mont Blanc was made in 1856, and my last successful ascent in August, 1898. For thirty-five of these years I have had the priceless benefit of the companionship and the services of Melchior Anderegg, of Meyringen, perhaps the greatest all-round guide whom the love of mountaineering has ever produced. Whatever moun-

taineering successes I have achieved, I owe almost entirely to him. He has led me in eight of my ascents of the mountain, and it is with a peculiar pleasure and pride that I record that I never heard him utter a word to which the gentlest woman could object, and that I have never found him unequal to any kind of emergency.

I now ask my readers to examine closely the picture of Mont Blanc, taken from the Brévent, which forms the frontispiece to this volume. In the extreme left corner are the rocks of the Grands Mulets, and just above them the Aiguille Pitschner. The ordinary Chamonix route lies up the glacier to the Vallot rocks on the extreme right, and thence by way of the Bosses du Dromadaire to the summit. It was the narrowness of the lower end of this ridge which foiled the early explorers. On the extreme left is the Corridor, and above the Corridor, in two lines, are the Rochers Rouges. Above the higher Rochers Rouges, and descending to the right towards the Grand Plateau, is the "ancien passage" discovered by Jacques Balmat. On the right of the picture are the slopes of the Dôme. A thorough knowledge of the geography of the mountain is essential to a complete understanding of much of the history which these pages describe.

No one knows better than myself how much this

volume falls short of the ideal which I hoped to attain, and yet I am not without hope that the Annals of Mont Blanc may prove of interest not to mountaineers only, but also to the general reader.

FOUR OAKS,
NEAR BIRMINGHAM,
November 1898.

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The Annals of Mont Blanc

CHAPTER I

LEGENDARY AND HISTORICAL

THE noble mountain which dominates the Alps, but which did not bear its present name till about one hundred and sixty years ago, rises to a height of 15,782 feet above the level of the sea. It forms the centre of a group of peaks and glaciers of immense interest and variety. This group, now known as the "Chain of Mont Blanc," measures from east to west about thirty English miles, but from north to south, not more than ten miles. The beautiful valley of Chamonix forms for the most part its northern boundary, and the water from its glaciers flowing north, finds its way into the river Arve, and thence to the Rhone. Its southern boundary consists of two Italian valleys, called the Allée Blanche and Val Ferret, whose waters meet near Courmayeur and form the river Dora Baltea. On the west it is bounded entirely by the Val Montjoie, the

chief villages in which are St. Gervais and Contamines, and its eastern boundary is sufficiently defined by the high road extending from Martigny in the valley of the Rhone, to Orsières.

Most of the northern and western slopes of this fascinating chain are situated in Savoy; the greater part of the south-eastern slope belongs to the Duchy of Aosta, and forms part of the kingdom of Italy; the eastern end of the chain is in Switzerland; and although its area is small as compared with some other mountain ranges, three languages are spoken on its base.

The chain of Mont Blanc contains more than thirty peaks, of which many are of the first order, some of the Aiguille or needle type, composed of slaty crystalline rocks, varying from 11,000 to nearly 14,000 feet in height. It is also the home of twenty great glaciers and many smaller ones; and in the centre of this mighty group, but high above them all, visible from places three hundred miles apart, soars that "silent pinnacle of aged snow," known in the middle ages as Mont Maudit, or the accursed mountain, but in later years as the White Mountain or Mont Blanc.

It is of stupendous natural beauty. In no other part of the Alps are the mountain forms of such infinite variety, or the snow fields so amazing in shape and size. In no other part of the Alps are the great rock walls more fantastic or more terrible, or the seracs of more dazzling splendour. The great summit must have been seen for countless years, flushed with rose at dawn and sunset, by thousands of men and women, but there was no

speculation in those eyes. In fine summer dawns it must have been visible from Lyons and Macon, and from the distant Italian plains. The peasants must have often watched it as they garnered their hay on the sunny slopes of Jura, and from many an elevation in the still more distant north. To whom did it first occur to explore the recesses of that great shrine of nature, and to plant the human foot on the summit of that "heaven-kissing hill"?

The love of adventure is as old as the hills themselves, but the appreciation of mountain beauty is a plant of modern growth. Old poets and writers have only the terms terrible and horrible in their Alpine vocabulary, the glaciers were known only as a difficulty, and the mountains as a danger. Many men crossed the Alps between the days of Hannibal and the days of Napoleon, but they had no eye for the beauties of nature, and apparently little taste or inclination to record what they saw. It is true that Petrarch ascended Mont Ventoux, and Leonardo da Vinci explored some parts of Monte Rosa, but their motive was rather curiosity than a desire of mountaineering for its own sake.

Konrad Gesner of Zurich, however, had the genuine mountaineering spirit. Mr. W. A. B. Coolidge tells us[1] that in the year 1541, Gesner wrote to his friend Vogel of Glarus, "I am resolved henceforth that . . . I will ascend several mountains, or at least one, every year, when the flowers are in their glory, partly for the sake of examining them and partly for the sake of good bodily

[1] "Swiss Travel and Swiss Guide Books," p. 12.

exercise and of mental delight. For how great a pleasure think you is it, . . . for a man touched as he ought to be, to wonder at the mass of the mountains as one gazes on their vastness and to lift up one's head as it were amongst the clouds" :

" Good bodily exercise and mental delight."

These words would form a fitting motto for the Alpine Club. It is remarkable to find here, says Sir Frederick Pollock, " in the words of a Swiss naturalist, that love of the sublime and picturesque elements in wild nature which is often supposed to have been born with Rousseau, two centuries later, but this is a love of wild scenery and something more ; there is the love of earning the sight by one's own muscular toil, the genuine mountaineering spirit." [1]

After Gesner came Josias Simler, who, writing in 1574, gave advice to travellers above the snow-line that might have been written yesterday, and who more than three centuries ago actually recommended the use of the rope and the " goggle." Thomas Coryat, who wrote in 1611, was a great traveller, and crossed the Mont Cenis on his way to Venice ; but his chief mountaineering discovery appears to have been that the peaks which divide the Rhine and the Rhone, are " the highest of all the Alpine mountains." Bishop Burnett, writing in 1685, makes an interesting reference to Mont Blanc. There is, he says, " one hill not far from Geneva called Maudit, or cursed, of which one-third is always covered

[1] " Mountaineering." Badminton Series, p. 10.

with snow." The most interesting of the old works on Alpine travel is undoubtedly that of John Jacob Scheuchzer, who was born in 1672. He published his "Itinera Alpina" in Latin, in 1723. The work is profusely illustrated, and gives an account of Swiss journeys taken by the author in the years 1702–1711. According to the preface, it was designed to supply a guide to "plain and mountain, to lakes, rivers, valleys, steep crags, even to the lofty summits of the Alps themselves." Now Scheuchzer was a Fellow of the Royal Society, which published at its own expense part at least of his work, some of the more interesting plates being prepared and executed at the cost of Sir Isaac Newton. Scheuchzer was thirty years of age when he made his first journey. He was a Doctor of Medicine and Professor of Mathematics in the University of Zurich. His scientific knowledge was of a very rudimentary kind. A certain lake, he tells us, has the marvellous property of swallowing up men who fall asleep upon its banks, —as the magnet attracts iron. He appears to have believed everything that was told him on his travels. A certain huntsman informed him that the chamois was invulnerable after eating the blue flower of the "Doronicum"; and that men might enjoy a similar privilege if they partook of the roots of the same plant before sunrise. The author gravely assures his readers that this story must be untrue, as "there is no such thing as 'Doronicum' with a blue flower in the Alps." He devotes a good deal of attention to the habits of chamois, and informs us that this animal, which he calls "rupicapra,"

is fond of licking porous rocks in order to promote digestion. It is a pity that parts of this work have not been translated, for it contains some marvellous stories. Scheuchzer, however, is chiefly remarkable for his discovery of Swiss dragons. Not that he ever saw one himself, but information as to their habits, appearance, and places of resort, was brought to him by unimpeachable witnesses. His work is embellished with many drawings of these animals, one of which is reproduced here; but let no one be alarmed. Even Scheuchzer does not assert their existence on the Chain of Mont Blanc, and if they ever did exist, they have fortunately died out. Scheuchzer ascended Mont Pilatus (not quite to the summit), but tells us he has nothing to add to the description of the mountain given in the monograph of Konrad Gesner. He was probably not very fond of climbing. "Very few care," he adds, "for this laborious kind of pursuit, which is by no means lucrative. It is not every one who can take pleasure in climbing hills which reach the clouds."

His travels were confined chiefly to the Oberland and the Engadine, and he appears never to have visited Geneva or to have seen Mont Blanc, but he had a keen interest in the mountains, and was a true pioneer. Mr. Coolidge tells us in his learned and admirable work on "Swiss Travel and Swiss Guide Books," that Scheuchzer was entitled to be held in honour by all travellers, for whom he greatly smoothed the way by his labours, though rather as a painstaking collector of facts than as a sound philosopher."[1]

[1] "Swiss Travel and Swiss Guide Books," by W. A. B. Coolidge. London: Longmans, 1889.



One of Scheuchzer's Dragons.

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Legendary and Historical

Certainly scientific men began to be interested in mountains and glaciers before the beginning of the seventeenth century, and ascents of some importance were made and recorded when the eighteenth century was well on its way.

The city of Geneva has been remarkable for three hundred years as a school, not of divinity only, but also of scientific inquiry. The whole chain of Mont Blanc, though at a distance of sixty miles, can be seen and studied from the uplands north of the glorious lake, and from the beautiful summit of the Salève. Yet it is a fact that none of the inhabitants, in quest of scientific discovery or of personal adventure, were early attracted towards the great white heights, on which they must have so often gazed.

Why did the mountains remain for them so long "accursed"? The surplus waters of the lake swept unceasingly through the ancient city in

"The blue rushing of the arrowy Rhone,"

and were polluted then as now, by the turbid and dirty river which came direct from those unknown hills. Possibly the colour of the Arve confirmed the superstition so long prevalent, that in consequence of their crimes, the people of Chamonix were condemned to live amongst eternal snows. The spirit of adventure was dormant. The hills remained "Les Montagnes Maudites," and yet maps of the country were not unknown. A fair map of Switzerland is published in Scheuchzer's work, and although the mountains are

represented by the then conventional string of mole-hills, the valley of the Arve is clearly defined, and "Cluse" and "Chammuny" are distinctly marked. I have examined with great care the magnificent collection of old European maps in the British Museum. In one map, published in 1650 by Nicolaus Visscher, the site of Mont Blanc is marked "Le Mont Maudit," and the same term is used in another, dated 1657. In one by Justinian Danckerts, published in 1660, the whole range is described as "Les Glacières," and the same title is given in maps published in 1703, 1715, 1730, and 1740. In a map of Switzerland published in 1760 by Abraham Rouvier, "Les Glacières" extend from Valorsine to "Mont Maley," the only peak in the chain to which a name is given. Possibly with a single exception to be noted later, the map appended to "Nouvelle Description des Glacières," by Bourrit, published in 1787, is the first real map to contain the name "Mont Blanc"; but no other mountain in the chain is named. Finally, in a map of Switzerland published by Chrétien de Mechel in 1799, the words Mont Blanc appear on the proper site. Nevertheless, the great summit was certainly known by its present name, at least at Chamonix and Geneva, in the beginning of the last century.

Although the mountain remained so long "accursed," the village of Chamonix was not unknown. We are indebted to Mr. Markham Sherwill, who made an examination of its archives in 1831, for much valuable information.[1] Sherwill's researches have made it clear

[1] "Historical Sketch of the Valley of Chamouni," by Markham Sherwill. Paris, 1832.

that Chamonix is a place of great antiquity, that a priory was founded in the valley during the reign of Pope Urban the Second, probably in the year 1090, and that the spot was known only as ".The Priory" until 1330, when the few cottages that surrounded the monastic building assumed the name of Chamonix. Certain orders to new-comers, "which all must obey or quit the valley in a month," were issued in this year by the despotic prior and are still extant.

In 1443 a Bishop of Geneva made his first visit to that extreme corner of his diocese. His name was "Barthomeus," who having visited the Abbot of Sallanches, went on foot to Chamonix, where he arrived on the fourth of October, 1443. In July, 1481, another Bishop of Geneva, "Jean Louis de Savoie," paid a visit to the Priory, and in 1520 a new code of laws, both for the Priory and for the new settlers in the valley, was ratified by the Abbot of the Monastery of Cluses. In 1530 Philippe de Savoie, Duc de Nemours and Comte de Genève, authorised a free fair to be held twice a year at Chamonix, and all persons in going or returning were made free from arrest for debt, or misdemeanour. In July, 1606, François de Sales, Bishop of Geneva, arrived at Chamonix on foot and stayed there several days. He visited the poor and sick, and preached to the people on the high road on his departure to Sallanches.

Other bishops of Geneva went to Chamonix in 1649 and 1650, but no record is left of their journeys. Visitors of some sort could not have been infrequent even then, for in the last-named year the Prior levied on each in-

habitant an annual tax of two sous for the repair of the roads. For ninety more years Chamonix had little or no history, until in 1741 great interest was aroused by the famous visit of Pococke and Windham, the first Englishmen who ever made an excursion to "Les Glacières." It is certain that other visitors, actuated by curiosity or love of adventure, had preceded Pococke and Windham, notably a Prince of Sulzbach (a near relative by marriage of Charles Emanuel III., King of Sardinia), who made a visit to the glaciers in 1727. But Pococke and Windham left behind them an account of their journey, which previous explorers did not. Hence old writers erroneously attributed to these two Englishmen the discovery of the valley. Mrs. Starke, for instance, writing in 1829, tells us that "the valley might have been unknown at the present period if two English gentlemen had not in the year 1741 *discovered it*, and given to modern Europe details respecting a place which even the natives of Geneva—though only eighteen leagues distant—had never heard of." Again, Reichard, the author of the "Guide du Voyageur en Suisse," writing in 1824, tells us that "it is incredible that a valley so interesting and at the foot of the highest mountain of the old world should have remained unknown" until Pococke and Windham thought of visiting it; even so competent an authority as Dr. Ebel fell into the same mistake, and Michel Carrier, who wrote a biography of Jacques Balmat in 1854, makes the rash statement "that not a traveller had visited the valley of Chamonix previous to 1741." He adds "that it was not even known at Geneva except as a place exceedingly wild,

peopled by beings who were not less so, and surrounded by awful mountains, which rendered access to it difficult and dangerous." It has been shown that the valley was known to a few travellers, to Genevese bishops, and to local traders, but no account of it was ever given to the world. Pococke and Windham were its first real pioneers.

In 1741 William Windham was living in Geneva. He was an English gentleman, well known in London as "Boxing Windham." One Dr. Pococke, who had been travelling in Egypt and the Levant, arrived in the same city. Windham asked him to join with him in a journey to the glaciers, to which he at once agreed, and they took steps to form a party for the expedition. In that year Windham wrote a letter to M. Arlaud, a celebrated painter at Geneva, giving an account of his journey to the Glacières, or Ice Alps, in Savoy. "It is really a pity," he writes, "that so great a curiosity, and which lies so near you, should be so little known; for though Scheuchzer, in his Iter Alpinum, describes the Glacières that are in the Canton of Berne, yet they seem to me by his description to be very different from those in Savoy." "They were assured," he continues, "that they would find no necessaries of life in those parts, so they took sumpter-horses laden with provisions, and a tent." Windham "provided several mathematical instruments to take heights, hoping that Mr. Williamson, an able mathematician, Governor to Lord Hadington, would have been of the party," but he declined on account of the fatigue, and Windham would not take the instru-

ments himself, as none of his companions were able to use them.[1] The party consisted of Windham, Lord Hadington and his brother the Honourable Mr. Baillie, Dr. Pococke, and Messrs. Chetwynd, Aldworth, Price, and Stillingfleet, eight persons in all. They left Geneva on the nineteenth of June, attended by five servants. All were well armed. After six hours' riding they reached Bonneville, where they put up at an inn, "a tolerable one for Savoy as to everything but beds." The following day they proceeded to Cluses, taking three hours and a half on the road, whence riding three hours further "they came to St. Martin's bridge, right against Sallanches, which is on the other side of the Arve." For some reasons not given they did not visit the town, but preferred to encamp in a fine meadow in order to refresh themselves. Thence they proceeded to Servoz, where their horses were picketed all night in the open air, and the travellers, finding no beds, obtained some clean straw from a barn. The third day they started at dawn. The roads were so bad that their horses lost their shoes,

[1] Windham was then a young man of twenty-six, and was possessed of attainments of a high order. He was making a European tour with his tutor, Benjamin Stillingfleet, grandson of the celebrated Edward Stillingfleet, Bishop of Worcester. When at Rome they made the acquaintance of Mr. Price, Mr. Aldworth, Lord Hadington, and Mr. Baillie, and the friendship thus formed was renewed when they all met again at Geneva in 1741. The Rev. William Coxe, Stillingfleet's biographer, informs us that the party made frequent excursions into Alpine valleys, and "in particular visited those icy regions which stretch at the foot of Mont Blanc." He also tells us that the small treatise which Windham afterwards published "was written chiefly by Mr. Windham and Mr. Price, with the assistance of Mr. Stillingfleet," and that "they gave the first impulse to that curiosity which has since led travellers of every nation into the wildest recesses of the Alps."—"Life and Works of Benjamin Stillingfleet," by William Coxe; London, 1811, vol. i. p. 80.

besides running the risk of tumbling into the Arve, but at length they came to a pleasant valley where they had their first view of the glaciers. Continuing their journey, they reached "Chamouny," "where there is a Priory belonging to the Chapter of Salanches."

They were shown the "ends of the glaciers which reach into the valley," but their curiosity being by no means satisfied, they inquired whether, by going further up the mountain, they could not discover something more worthy of their notice. The peasants said yes, but that all travellers who had hitherto visited the glaciers had been satisfied with what had already been pointed out.

"The Prior of the place, a good old man," showed them much attention, but endeavoured to dissuade them from going further ; they, however, would not be denied, and at noon on the twenty-second of June succeeded in setting out, attended by several peasants, some acting as guides and some as porters. Windham points out that many maps place the glaciers on the same side of the Arve as Chamonix, but this, he rightly adds, is a mistake. The ascent was so steep that they sometimes had to use their hands "and make use of sticks with sharp irons at the end" to support themselves. After sights "terrible enough to make most people's heads turn," and scrambling for four hours and three-quarters, they reached the summit "of the mountain," from whence "they had the pleasure of beholding objects of an extraordinary nature." The spot reached was, in fact, the Montanvert. The travellers all descended on to the ice, "partly falling and partly sliding on their hands and knees."

Windham gives a very fair description of this well-known view. The bouquetin must then have been common on the Mer de Glace, for the guides told him that they went in herds of fifteen or sixteen. The party saw several chamois and shot at them, but without effect, as they were at too great a distance. Windham records one point of considerable interest. The guides told him that in the time of their fathers the glacier was but small, and that there was even a passage into the Valley of Aosta, which could be reached in six hours, but that the glacier had much increased and was continually increasing, and the passage was then quite stopped up. Having remained on the ice for half an hour, they drank, like true Englishmen, to the health of Admiral Vernon and success to the British arms, and having regained the summit (the Montanvert), they descended to Chamonix, "to the great astonishment of all the people of the place and even of our guides, who owned to us they thought we should not have gone through with our undertaking."

On the twenty-third they departed, and resting at Sallanches, arrived the following day at Bonneville. Here they ascended the "Maule" and had a delightful view: on one side Geneva, the Lake, and the adjacent parts; "on the other, high mountains covered with snow, which rise round in the form of an amphitheatre and make a most picturesque prospect." Descending the "Maule," they slept at Annecy, and the next day returned to Geneva.

It was an interesting expedition. Too much must not be made of the arms they carried in their hands. Pro-

bably any party travelling in 1741 in Savoy or elsewhere would have taken similar precautions, and, as Windham remarks, "although we met with nothing which had the appearance of danger, nevertheless I would recommend going well armed; 'tis an easy precaution, and on certain occasions very useful—one is never the worse for it, and oftentimes it helps a man out of a scrape." They went out expecting to find a wild and barbarous people. They found, in fact, a peaceable village presided over by a good old Prior, and a population industrious and honest, tilling their fields and storing honey from their bees.

There is one point about Windham's narrative that is somewhat singular. It is clear that he had a fine view of the mountains from the Môle, but he does not say one word about Mont Blanc. It is quite possible that during his short stay at Chamonix he never saw it—if he did see it, he would surely have recorded the fact. It was very early in the season, and there was much snow on the road to the Montanvert. Probably the weather was cloudy, and Windham advises others who might be making a similar journey to set out in the middle of August.

Windham's visit and the circulation of his letter to M. Arlaud naturally attracted considerable attention. One Peter Martel, a Swiss engineer, at once determined to follow his example. Subsequently he wrote a letter to Windham detailing the results of a visit to Chamonix which he made in 1742. His party consisted of a goldsmith well skilled in minerals, an apothecary who was a good chemist and botanist, and MM. Martin and Girod. Laden with various scientific instruments, they

left Geneva on the twentieth of August, halted at Bonneville and again at Cluses, and reached Sallanches in the evening. The following day they passed St. Gervais and Servoz, one of their horses losing a shoe, "and almost all his hoof," and entered the Valley of Chamonix, "having on our left the Arve, and on our right a fine hill which reaches as far southward as the mountain called Mont Blanc." This I believe to be the first occasion on which the name of the Great Mountain is ever mentioned in any existing publication. It will be observed that Martel's party reached Chamonix in two days from Geneva. On the morning of the third day they employed seven men to assist them in climbing and in carrying provisions. They ascended "the Mountain," that is, the Montanvert, and looking down into the ice valley, "were struck with astonishment at so extraordinary a sight." [1]

Martel made a plan of the glaciers, being aided by a guide "who was a very intelligent person, not only knowing the country, but having also assisted in the last survey which the King of Sardinia had caused to be made of Savoy." They regained the Priory at seven in the evening. The following morning Martel's companions were anxious to return, but Martel "took with his semicircle the height of Mont Blanc by two different operations, which corresponded exactly."

The weather was fine and dry, and Martel describes

[1] In the year 1779 an Englishman of the name of Blair erected a wooden hut on the Montanvert for the convenience of travellers, and in the year 1795 M. Desportes erected at his own expense an improved refuge of stone, of which a picture is given. The vignette on the title-page shows the position of these two refuges.



The "Desportes" Refuge on the Montanvert.

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many of the peaks. "'Tis this point of Mont Blanc," he says, "which is supposed to be the highest in all the Glacières, and perhaps of all the Alps. Many persons of the country who have travelled assured me that they had seen it from Dijon, and others from Langres, which is 135 miles distance." Martel speaks well of the Chamoniards. He says: "They are a very good sort of people, living together in great harmony; they are robust, live to a great age, and have very few beggars among them. Their honey is white, resembling very much that of Narbonne for colour, but not for taste. The sheep are left without any one to watch them, there being in this valley no beast of prey, though bears, wolves, and foxes abound in the country all about." Martel returned to Geneva on the twenty-sixth of August "without any other regret than not having stayed longer at Chamouny to have considered the beauties of the places thereabouts."

"Suffer me, sir," he concludes, "to address this account of our voyage to you, as the person to whom of right it belongs; you marked us out a way which was easy to follow by the help of your directions."

They were both true pioneers—Windham from love of adventure, and Martel from love of science. Four plates are added to Martel's letter. There is a picture of the view from the Montanvert, quite unlike anything in nature; a view from the Priory, which no one can now identify; good drawings of the bouquetin, the chamois, and the marmot; and a map of the course of the Arve and of the glaciers and high mountains of Chamonix,

which will be found reproduced in the Appendix, and which is a specimen of the cartography of a hundred and sixty years ago.

The two letters—the one from Windham to Arlaud, and the other from Martel to Windham—were published together in 1744, "as laid before the Royal Society." [1]

The book was sold for the merest trifle, but is now one of the rarest in Alpine bibliography. The effect of its publication, though not immediate, was far-reaching. The attention of the scientific world was drawn to the Valley of Chamonix and the wonders that it contained. Horace Bénédict de Saussure was yet in his cradle, but the invasion had begun.

[1] "An Account of the Glacières or Ice Alps in Savoy. London: printed for Peter Martel, 1744, price 1s. 6d."

NOTE.—This volume is so uncommon and so extremely interesting that a *facsimile* of it is given in the Appendix. I have stated in the text that three languages are spoken on the base of the chain of Mont Blanc Of course on the Valais or Swiss side the language is French as far as Sion, but I have ascertained that many German-speaking families live in and near to Martigny.



William Windham.

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CHAPTER II

HORACE BÉNÉDICT DE SAUSSURE—MARC THÉODORE BOURRIT—THE EARLY ATTEMPTS TO ASCEND MONT BLANC.

WINDHAM and Saussure were, in a sense, contemporaries. It was in 1741, as we have seen, that the memorable journey of Pococke and Windham to the glaciers of Chamonix was planned. On the seventeenth of February in the preceding year Saussure was born at Geneva. His father was Nicolas de Saussure, a Genevese, and his uncle, for whom he had a great regard, was M. Charles Bonnet, a well-known savant of the same city. The father was an eminent agriculturist, and greatly interested in science. He occupied a house and farm at Conches, near Geneva, was a member of the Council of the "Two Hundred," and took an active part in public affairs. His attention was mainly directed to the growth and diseases of grain and farm produce. His work on "Fecundity in Plants and Fertility in the Earth," published in 1782, attracted considerable attention. His son's mind was early impressed by scientific subjects. His youth was passed at the farm, and his rare love of nature developed an unusual capacity for obser-

vation. He worked with his uncle on botanical subjects, and made the acquaintance of Haller, who bore willing testimony to his exceptional powers. He received an excellent training at the Academy at Geneva, where he was sent, and his studious habits enabled him to make rapid progress. Shortly after attaining his majority he was offered the post of Professor of Natural Philosophy, and rapidly justified his election to the chair, which he occupied for twenty-five years. He specially devoted himself to geology and physical geography.

He was a teacher of logic and physics, and founded the Society of Arts of Geneva in 1772. He elaborated a system of education for his native city, which, however, was then deemed of too radical a nature for adoption. In due course he became like his father, one of the Council of the "Two Hundred," and later of the National Assembly. He was also a member of most of the European scientific societies, and carefully studied meteorology and the temperatures of rivers, lakes, and glaciers, having himself invented all kinds of scientific instruments. His great work on Alpine physiography, "Voyages dans les Alpes," is the finest of the Alpine classics. His portrait was twice painted, the first by Juehl, a Swedish painter, when Saussure was young and in the prime of his mountaineering career. The best-known portrait is, however, by St. Ours, and was painted in later years. He was something more than a naturalist, and, as will be seen below, he was a keen observer of human nature. His life was written by Senebier, by Cuvier, and by M. de Candolle ; he was a man of rare

intellectual endowment, and one for whom the mountains had an irresistible fascination. His life was spent not in work only, but the best kind of work. All the leading lights of the time were proud of his intimacy or even of his acquaintance. He was visited by the Emperor Joseph the Second in 1777, and by Goethe in 1779. He suffered greatly from the effects of the French Revolution, and having invested nearly all his fortune in French funds lost almost everything. A paragraph appeared in a French journal in 1795 to the effect that he was reduced to want; and it is not generally known that an English nobleman, Lord Bristol (whose brother, General Hervey, was an intimate friend), offered in the most delicate manner not only to settle an annuity upon him, but to allow him to share his home, and to afford him every opportunity of pursuing his researches in Natural History. The offer was declined as gracefully as it was made. "It is true," he replied, "that nothing is left to me, but my wife has still sufficient for the needs of my family and myself; but your kind offer, nevertheless, will always remain engraven upon my heart."[1] There is little doubt that his arduous labours shortened his life; he died on the twenty-second of January, 1799, at the comparatively early age of fifty-nine years, and his funeral was marked by exceptional demonstrations of honour.[2] But we are chiefly concerned with him in his capacity as an early explorer and passionate admirer of Mont Blanc.

As a boy he had a keen love of the mountains. He

[1] *Revue Suisse*, 1883. Article by Ernest Naville.

[2] *See* "Encyclopedia Britannica," vol. xxi. p. 323.

climbed all the hills about Geneva, and knew the form of the great white mountain by heart. Later he went to live in a charming country-house called Creux de Genthod, about four miles from Geneva, on the northern shores of the Lake, where his grandson still resides. It was there that he composed his great work; and his "Discours préliminaire," which bears date the twenty-eighth of November, 1779, is worthy of the most attentive perusal. He tells us that "Humanity in the Alps is not less interesting than physical nature. Though man is at bottom everywhere the same, plaything of the same passions, stirred by the same needs, still it is only in the Alps, if anywhere in Europe, that one may hope to find men civilised enough not to be savage, and yet natural enough not to be corrupt. It is only in those elevated valleys where there are no landlords, no men of wealth, no throng of foreigners. Those who have only seen the peasant in the neighbourhood of towns have no idea of the true man of Nature. There he has a master, he is obliged to render unpleasing services, he is crushed by the disdain of the great, corrupted and at the same time despised by degraded menials, so that he becomes as abject as those who corrupt him. The Alpine peasant, seeing only his equals, forgets that there exist men more powerful than himself; his soul is ennobled and elevated; the services that he renders, the hospitality he offers, have no servile or mercenary taint; he exhibits that noble pride which is the companion and stay of all other virtues. How often have I, arriving at nightfall in some lonely hamlet where there was no sort of inn, knocked

at the door of some cottage, and there been received, after answering a question or two about my purpose, with a hospitality dignified, cordial, and disinterested, such as it would be hard to find elsewhere. And will you believe that in these lonely wilds I have found true thinkers, men who, by the mere strength of natural reason, have risen far above the superstitions which the lower classes in towns so greedily swallow.

"From my childhood the mountains powerfully attracted me. I still remember the thrill which went through me when I first touched the summit of the Salève and could feast on the views stretched out before me. At the age of eighteen I had more than once explored the mountains nearest to Geneva. The next year I spent fifteen days in one of the highest châlets on the Jura that I might explore the Dôle and the neighbouring mountains, and the same year I made my first ascent of the Môle. My curiosity and ardour, however, were but imperfectly satisfied by these moderate exploits. I longed to see at close quarters the great Alps which appeared in such majesty from the heights I had attained.

"In 1760 I went alone and on foot to visit the glaciers of Chamonix, which were then rarely frequented, and were considered difficult and dangerous of approach. I returned the following year, and since then have let no year pass without serious expeditions, even long journeys in pursuit of mountain study. During this time I crossed the main chain of the Alps fourteen times by eight different routes, besides making sixteen excursions into the centre of the chain. I visited the Jura, the Vosges,

and the mountains of Switzerland, of part of Germany, of England, Italy and Sicily. I have explored the extinct volcanoes of Auvergne and of Vivarais, and the mountains of Forez, of Dauphiné and of Burgundy. I have made all these journeys with a miner's hammer in my hand, merely for the purpose of studying natural history, climbing all accessible summits which seemed to promise interesting observations, and always carrying off specimens from the mines and mountains, especially those which threw any light on physical theories, in order to examine them at my leisure. I even made a rigid rule to take notes on the spot, and to enlarge and transcribe them during the following twenty-four hours."[1]

Such was the kind of man who was mainly responsible for the first conquest of Mont Blanc.

Another native of Geneva, of far humbler origin and no scientific pretensions, shares with Saussure the credit of having drawn the attention of Europe to Mont Blanc. He was Marc Théodore Bourrit. He was something of an artist and a great deal of an enthusiast. Saussure employed him to illustrate his great work and gave him his best title to fame. He was a prolific author on his own account, and his well-known "Nouvelle Description des Glacières," profusely illustrated from his own drawings, and dedicated by permission to Louis the Sixteenth, first appeared in 1781. A third edition, containing an account of his subsequent travels, was published in 1787.

[1] "Voyages dans les Alpes," 1787–1796, 8vo, Genève and Neuchâtel; 1796–1804, 4to, Neuchâtel.



Saussure, from a picture by Juehl.

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He certainly would not now be deemed a competent mountaineer, and although he made several attempts, never succeeded in reaching the summit of the great mountain. His drawings of mountain scenery, though somewhat rough, are fairly accurate. His style is stilted and verbose, and is altogether deficient in humour. On one occasion he had arranged to rest for a night at the "dreadful village" of Contamines, in a house containing but one small chamber. He was agreeably surprised at meeting a young and beautiful girl from Chambéry, who, though unappalled by the wildness of the scenery, was greatly frightened at the sight of M. Bourrit, and although he was a Precentor of the Cathedral of Geneva, she promptly ran off in great alarm. "I was offended at her fears," he says. "I ran after her, and implored her to form a more favourable idea of us—and had the good fortune to induce her to listen to me. We took supper together, and I placed at her disposal the accommodation which had been reserved for me, and sought another place of repose." [1]

Saussure and Bourrit were the real pioneers who created a mountaineering interest in Mont Blanc. But for them, its conquest would have been indefinitely postponed.

Saussure visited Chamonix in 1760 and 1761, and on both occasions offered a large reward to any one who could find a way to the summit of the mountain.[2] Indeed, he went even further, for he offered to pay those

[1] "Nouvelle Description des Glacières," 1787, vol. i. p. 235.

[2] "Voyages dans les Alpes," 1786, vol. iv. p. 389.

whose attempts might prove unsuccessful. But nothing came of these offers. The peasants of Chamonix hunted chamois and searched for crystals, but were not mountaineers in the true sense, for they had no love of the mountains for their own sake; who were they, that they should attempt an expedition so long believed impossible? But yet there were some who were not deficient in the spirit of adventure. One Pierre Simond made two desultory attempts, one on the east side, by the Glacier du Géant, and one by the Glacier des Bossons, but he returned with no hope of success.

It was not unnatural that a first attempt should have been made from the Glacier du Géant, although the route by the Montagne de la Côte and the Glacier des Bossons was apparently the easier of the two. It is certain that this part of the mountain was very imperfectly known, whereas the Mer de Glace and part of the Glacier du Géant were constantly traversed by all the Chamonix hunters. The first object of every casual visitor was to cross, or at least to see the Mer de Glace. Chamois hunters and crystal finders were well acquainted with it, and with its affluents, and the Couvercle and the Jardin were well known. From the latter the whole of the Glacier du Géant can be seen apparently (but not really) stretching to the summit of the mountain on its eastern side. Moreover, tradition said that a pass existed from the Mer de Glace into Italy—a pass of great height, on the very shoulder of Mont Blanc. It was reasonable enough, therefore, that Pierre Simond should have explored in this direction, and that Jacques Balmat should himself

make one of his early attempts by this route. Probably both explorers were stopped by the great ice ridge which stretches from Mont Blanc to the Aiguille du Midi. The bare facts only of Pierre Simond's attempts in 1762 have been recorded.[1]

Thirteen years elapsed before any further efforts were made. Many persons had visited the valley in the interval, and made various excursions on the glaciers. The great mountain was becoming better and better known. Saussure's offer being still open, was no one bold enough, or adventurous enough, to try for the promised reward ?

In 1775 four Chamonix peasants made a determined effort by the Montagne de la Côte. This well-known ridge separates the glaciers of Bossons and Taconnay, and the highest point of it, about 8,500 feet above sea level, appears from the valley, almost to reach the rocks of the Grands Mulets. As a matter of fact, it takes nearly three hours to climb from the one point to the other. Probably in the past the rocks of the Montagne de la Côte extended in one unbroken line as far as the Grands Mulets and the Aiguille Pitschner. An exquisite drawing of this beautiful ridge appears in the fourth volume of Mr. Ruskin's "Modern Painters," and is there described as the Crest of la Côte. It was by this route that most of the early attempts were made, and by which the mountain was ultimately climbed. The pioneers determined to take the Montagne de la Côte as a starting-point. Saussure tells us that it abuts upon the ice and the snow, which stretch without interruption to

[1] Auldjo, "Ascent to the Summit of Mont Blanc," 1828, p. 308.

the summit of Mont Blanc, and that the first obstacles being once surmounted, there remains only the length of the route and the difficulty of making the ascent and the descent in one day. "I say in one day," he adds, "because the country-folk believe that it is impossible to pass the night amongst the snows." [1] Up to this time every one had been discouraged, but strangers hearing of Saussure and his offers were naturally interested. Amidst some excitement in the valley, the four would-be discoverers started on their journey. They were Michel Paccard, François Paccard, Victor Tissay, and a young adventurer described by M. Bourrit as "the son of the respectable Couteran," a widow who kept an inn in the village.[2]

The Rev. William Coxe, in his most interesting "Travels in Switzerland," published in 1789,[3] gives the name of Marie Couttet as one of the three guides, but M. Bourrit, who received his information from young Couteran himself, was probably the better informed.

At eleven o'clock at night, on the thirteenth of July, they started from the Priory, hoping to be the first to enjoy the view from the summit. In two hours and a half the party arrived at the foot of the glacier of Taconnay, and finding a suitable sleeping-place—no doubt on the base of the Montagne de la Côte—and being somewhat fatigued, rested until morning. Rising at break of day, and in perfect weather, they climbed the

[1] "Voyages dans les Alpes," 1786, vol. iv. p. 390.

[2] Bourrit, "Nouvelle Description des Glacières," 1787, vol. i. p. 159.

[3] Vol. ii. p. 2.

ridge, notwithstanding "the perpendicular rocks and the abysses which the eye dare not gaze upon." As a matter of fact, the route thus far contains at the present day no particle of difficulty or danger. They heard the shrill cries of the marmots, and saw "a quantity of chamois rushing pell-mell amongst the sheep and the goats." Alas for the progress of civilisation, Chamonix is not now so highly favoured! They then entered upon the great ice-field, from which flow the glaciers of Bossons and Taconnay, and proceeded higher and higher towards the Grand Plateau. On their left was a high rock, which they compared, not inaptly, to one of the pyramids of Egypt. This was the Grands Mulets, or possibly the Aiguille Pitschner, almost the culminating point of the Grands Mulets ridge, in the centre of the great ice-field. Couteran and Tissay determined to reach it, notwithstanding the reiterated warnings of the brothers Paccard, who thought the peril too great. The two gained these rocks with as much pleasure, Couteran observed, as a mariner dry land after a long time afloat. After finding some crystals they rejoined their companions, who were not far from the summit of the rock, and proceeded upwards. They were sufficiently high to look over the Brévent, and the chain of the Aiguilles Rouges—which bounds the Valley of Chamonix on the north. They saw the summit of the Buet and the Lake of Geneva, which was compared to a piece of linen lying in a field. The snow became extremely steep when they reached two ice-walls of prodigious height, flanked by symmetrical towers and crevasses, like the loopholes of

an ancient fortress." These difficulties proved too great for the exploring party, but they were not all; the heat was so great that they covered their hats with snow to avoid sunstroke, and a lassitude overcame them which could not be conquered "without the aid of liquor." The summit appeared to be close—they thought about the distance of a league; a very palpable mistake. Clouds drifted over the mountain, and soon enveloped them and forced a hasty retreat, the fear of being lost giving a great impetus to their descent. The Priory was regained at ten at night, when they were able to tranquillise their friends, who feared that after twenty-two hours' absence they were entombed in the snows of Mont Blanc.

So ended the first real attempt. Had they slept on the summit instead of at the base of the Montagne de la Côte, and the weather been fine, they might have succeeded. It was a creditable performance, but possibly the stimulants which they called in aid served only to retard. But we must be gentle with the pioneers, and never forget that they were in a new world, and that they had the dread of the unknown before them, as well as its charm. While all suffered more or less from their exertions, there was at least the satisfaction of knowing that they had been nearer the summit than any previous adventurers.

It is not easy to fix the exact point reached, but Sir George Shuckburgh, who visited Chamonix the month following the expedition and had every opportunity of talking with the explorers, and who had taken the height

of Mont Blanc from the summit of the Môle, fixed it at about 13,000 feet, but this was clearly an error. The point gained was probably about midway between the Grands Mulets and the Grand Plateau.

The Montagne de la Côte is now rarely visited, but the ridge is the home of rare and beautiful ferns and flowers, and the view from its summit is grand in the extreme. Glaciers flow to the right and to the left, the great ice-field stretches to the Grands Mulets, which seems to be distant but a "stone's throw," while the mighty dome of Mont Blanc is exactly in front with its attendant Aiguilles from the Verte on the one side, to the Goûter on the other.

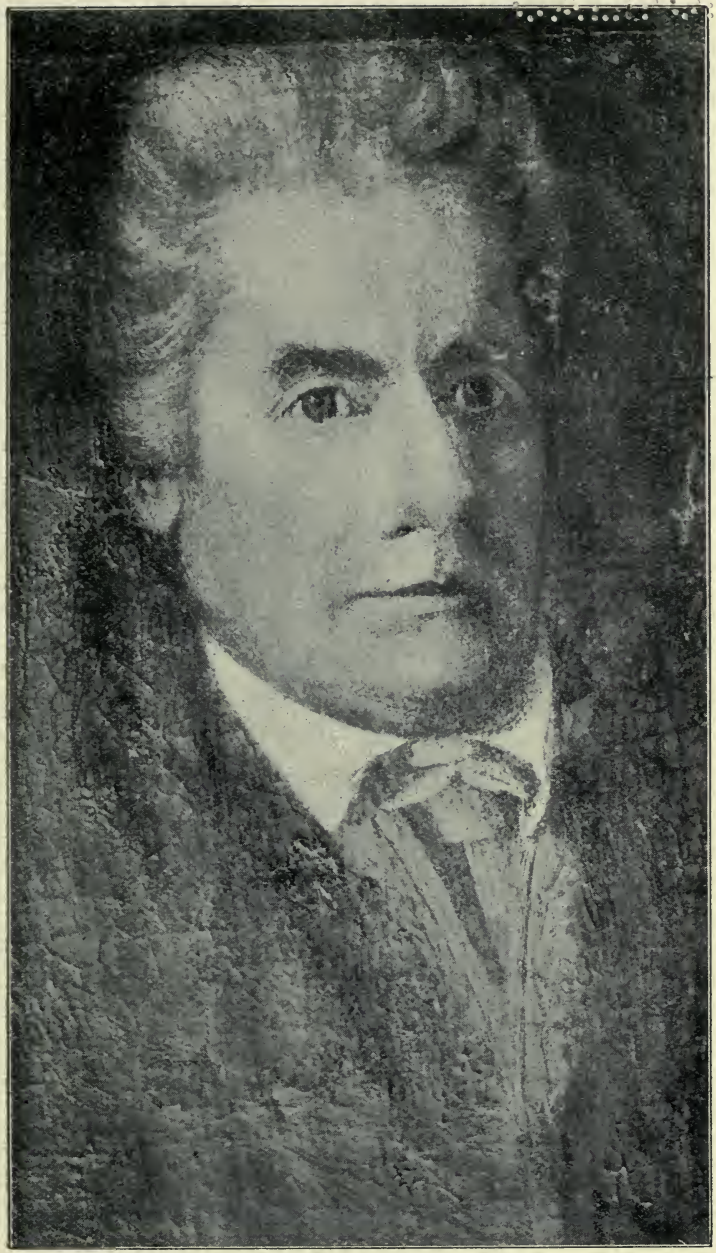
Eight years passed before a second attempt was made. In 1783 three other guides of Chamonix, Jean Marie Couttet, Lombard Meunier, and Joseph Carrier, tried again by the same route, passing the night on the summit of the Montagne de la Côte, and early on the following morning entered on the great ice-field and went in the direction of the Grand Plateau. They attained a considerable elevation, but whether or not as high as their immediate predecessors is not known. One of them, said to have been the most hardy and robust of the party, was suddenly seized with such an "exposition of sleep" that further progress was impossible. He implored his companions to continue the journey without him, but they feared to leave him sleeping on the snow; so the enterprise was given up and the party returned to Chamonix. The eminent author of the "Voyages dans les Alpes" describes this incident with a naïveté which is

perfectly charming. This desire to sleep, he says, is produced by the rarity of the air. Now low pressures produce very remarkable results, but an insurmountable desire to sleep is certainly not one of them. It would perhaps be more profitable to inquire whether the "most hardy and robust of the party" had not sought to sustain his faltering steps by the too frequent use of that supposed remedy to which his predecessors admit that they had recourse—a remedy always useless, and generally worse than the disease—and which at least in these days is known to produce that insurmountable desire for sleep which the great Saussure attributed to the rarity of the air! It was after this expedition that Lombard Meunier uttered the sentiments which have since become historical. He said, "It is of no use to take any provisions for the journey; all that is wanted is an umbrella and a scent bottle"—a statement which had a great effect upon Saussure, and led him to believe that the ascent of Mont Blanc was more hopeless and impracticable than ever.

About this time the village doctor of Chamonix was Michel Gabriel Paccard, who was born in 1757 and was then just twenty-six years of age.[1] He was reported to be a good mountaineer, and certainly had some scientific attainments, for he was a corresponding member of the Academy of Turin.[2] He had, moreover, one

[1] NOTE.—I am fortunately able to present to my readers a likeness of Dr. Paccard It was taken when he was an old man, and is reproduced from a picture by an unknown painter, now belonging to M. J. P. Cachat, of Chamonix, who was a great-grandson of the Doctor.

[2] Leschevin, "Voyage à Genève et dans la Vallée de Chamouni, 1812, Paris, p. 245.



Michel Gabriel Paccard.

[*To face page* 32.

cardinal virtue ; being greatly interested in the attempts on Mont Blanc, he was in the habit of recording the various excursions as they took place, keeping a book, in his own handwriting, of particulars of the early expeditions, and carrying it on down to 1825, where he records the ascent made by Clark and Sherwill. In some of the expeditions, as we shall see, he took an active part. The Doctor, when not writing from personal knowledge, manifestly had access to the best sources of information, for he was not only a pioneer himself, but he lived amongst them. Having felt for years that sufficient justice has not been done to the memory of Dr. Paccard, I endeavoured in the year 1896 to trace out his descendants.

The Doctor left two children, a son named Ambroise and a daughter named Josephine. The daughter married Julien Dévouassoud, one of the guides who survived the catastrophe of 1820 of which we shall hear. The son, Ambroise, a doctor like his father, left a daughter named Marie Caroline, who married Jean Michel Balmat, of Chamonix, who had a son named Adolphe Balmat (now one of the Chamonix guides), and who is, therefore, great-grandson of Michel Gabriel Paccard.

This precious volume was in Balmat's possession, and was considered by the members of his family to be a great treasure. He has courteously placed it at my disposal. It is not only extremely interesting as a specimen of mountaineering archæology, but it adds greatly to our knowledge, confirming as it does contemporary accounts, and giving dates and names not previously recorded.

The second attempt on Mont Blanc which I have already narrated, is thus described in Dr. Paccard's diary :—

"Second attempt on Mont Blanc by the Montagne de la Côte (see the first in the work of M. Bourrit). July 12, 1783. 'Grand Joras' (a nickname for Lombard Meunier), Joseph Carrier, and Marie Couttet started for Mont Blanc. They slept on the Montagne de la Côte, had a good crossing of the Glacier des Bossons, but they found the rocks difficult and rotten. They went up the snow arch which covers the first rocks at the foot of the little or second Mont Blanc, where Marie Couttet was taken ill. As they were exposed to the sun, about eight or nine o'clock they came down again. They suffered a good deal and got blistered whilst going up. The snow was hard, but softened about noon when they were coming down. They reached the Montagne de la Côte and had some sleep."

Many quotations will be made from this interesting manuscript, which I am informed no person out of the family—certainly no person interested in the story of Mont Blanc—has ever previously perused.

In the same year the enthusiastic, but always unfortunate, M. Bourrit followed in the same tracks. He, too, slept on the summit of the Montagne de la Côte, but when he thought that he was on the point of success a sudden storm drove him back. Poor Bourrit always derived some consolation even from his misfortunes. At five in the morning he was grappling with the snow and ice. "He was surrounded by horrible crevasses and great

frozen cliffs." His companions, whose names other than that of Dr. Paccard he does not give, did their best to find a way for him, but without success—they were enveloped in a thick, black veil; rain followed, but the bad weather, he says, "was succeeded by a ravishing view." Above the clouds they saw Mont Blanc suspended in the air like a shining light, and the great Aiguilles appearing above the tempest, brilliant and beautiful. "Such were the magnificent scenes which compensated us for not having attained the summit of Mont Blanc."[1]

This excursion can scarcely be included amongst the serious attempts to gain the summit, as bad weather set in before any real effort was made. It appears that the expedition took place on the fifteenth of September, 1783. Dr. Paccard was one of the party, and the following is his account, which, it will be observed, does not quite coincide with that of Bourrit:

"I started with M. Bourrit, the miller Marie, and Jean Claude Couttet; we went and slept at La Tournelle, but arrived only at the glacier, which was much crevassed. Mont Blanc was covered with clouds, and M. Bourrit did not dare to go on the ice."

Saussure declared that from information which he had received from all those who had tried the mountain from the Valley of Chamonix, he looked upon success as wholly impossible, and that all sensible persons in the village were of the same opinion.

[1] Bourrit, "Nouvelle Description des Glacières," 1787, vol. i. p. 167.

CHAPTER III

FURTHER ATTEMPTS TO ASCEND MONT BLANC

THE mountain had now been unsuccessfully attempted from two sides. Bourrit, who, according to Saussure, had taken still greater interest in its conquest than himself, now proposed to try it from a third. He had heard that two chamois hunters from the neighbourhood of St. Gervais had attained a great elevation on the ridge which stretches from the Aiguille to the Dôme du Goûter, and he made his arrangements accordingly.

But, before describing this particular expedition, we must again have recourse to the story of Dr. Paccard. It has always been thought that Bourrit was the first to suggest the ascent from the St. Gervais or western side. But it is not so, as Dr. Paccard's manuscript will show.

"Journey by the Goûter to Mont Blanc with 'Henri.' On the ninth of September, 1784, we started at 3 p.m. for Bionnassay, which we reached half an hour after night had set in by Vausa (Col de Voza). We had supper, having to wait for Pierre Perroux' son, who led us to Jean Baptiste, son of Joseph Jaquet at Villette. They took us to the Grua, to Guillaume Jaquet known as

the 'Malin' (crafty), who was on the Miage Mountain, and although it was past eleven p.m. we started to go up. My guide, Henri Pornet, fell ill, owing probably to fatigue and the brandy he had taken, so we did not arrive until three a.m. On crossing the Bionnassay stream, I broke my barometer, and Joseph Jaquet de Villette gave me his. . . . It took us three hours full to get up from the flat at the foot of the Bionnassay glacier. The rock is rotten, and more difficult to climb than it appears. . . . We went up by Pierre Ronde, the Roc Rosset, and all along the side of the glacier over the snow . . . and reached at night a small level place close to the glacier of Bionnassay, where Henri was waiting. We crossed without crampons by a steep slope, and arrived at Chamonix at three o'clock. I again broke the barometer."

This statement proves beyond all reasonable doubt that Dr. Paccard and not M. Bourrit first prospected from the west side.

Bourrit then started for St. Gervais. What is now known as the St. Gervais route commences at that village and proceeds, by way of the hamlet of Bionnassay and the right bank of the glacier of that name, to the foot of the Aiguille du Goûter. Bourrit had written to Lombard Meunier and to Marie Couttet to meet him at St. Gervais, and had also engaged the two experienced local hunters on whose knowledge and services he greatly relied. One Maxime of Sallanches also accompanied him, a willing and honest man, whose mountaineering experience was, however, limited to

conducting strangers along the mule-path to Chamonix.

This party of six started from St. Gervais on the night of the sixteenth of September. After stopping for refreshment in the upper part of the valley of Bionnassay, they resumed their march at midnight aided by the light of a torch, a plan not without its advantages, as Bourrit says "one does not see the precipices on the line of route, and the journey seems shorter than by day." They walked four and a half leagues admiring the purity of the sky and the countless stars, but a cold wind began to blow which troubled them a good deal. At half-past five in the morning they came to the foot of a wall "which looked like the last rampart of Mont Blanc"—on their right was the glacier of Bionnassay. Bourrit stopping to put on his crampons and some warm clothes, Marie Couttet and François Cuidet went on climbing without his knowledge, and were soon lost to view.

Some time later he saw them at the end of the glacier, a spectacle, he says, which filled him with admiration, though the two guides were doing a little climbing on their own account. The cold became so bitter and penetrating that Bourrit and the three remaining men were unable to proceed. First Maxime of Sallanches, and then Bourrit himself, became ill. To add to their troubles, the two guides in front carried all the wine of the party! Hence there was nothing to do but to abandon the enterprise. Meantime the two leaders had been climbing up the rocks of the Aiguille du Goûter, and Bourrit had the melancholy pleasure of seeing them

arrive on that summit and disappear towards the sky. The point where Bourrit stopped was no doubt the Tête Rousse, a headland of steep rocks, about 10,000 feet above the sea, which stretches nearly to the base of the Aiguille du Goûter, and divides the Glacier de la Griaz from that of Bionnassay. He consoled himself as usual with the beauty of the scenery, and with the thought how far they were above Chamonix. But, as M. Durier writes, the imagination of Bourrit was always two or three thousand metres higher than his body. He descended to the châlets at the foot of the glacier, a little anxious about his advanced guard, but not seriously so, as it would appear, for he at once went to sleep.

The two men returned at eleven o'clock, aroused him from his slumbers, and startled him with the information that, "Thanks to God, they had returned from Mont Blanc without accident."

They spoke, of course, in general terms, not having been on the summit of the mountain, or indeed near it, but they had made an important discovery. They told Bourrit that from the time when he lost sight of them they continued climbing along the snows for four hours and a half, and reached the Dôme du Goûter, the snows from which descended towards the Allée Blanche; that from this great elevation all the Alps were at their feet, and instead of feeling cold they were as in a furnace. The snow was in good order, but they suffered from the rarity of the air. They then proceeded in the direction of the Bosses du Dromadaire, whence they might have climbed Mont Blanc if the sun, which was then setting,

had permitted. At this point it seemed better to return. They had, in fact, gained the rock ridge between the Dôme and the Bosses on which the Vallot Refuge now stands, a height exceeding 14,300 feet, the highest point yet attained, but still some 1,450 feet below the summit.

Marie Couttet told Coxe that he passed the middle Dôme and walked along the ridge between it and the summit as far as some high rocks which from Chamonix looked like small points rising out of the snow; so that there can be no doubt as to the real point gained.[1]

Such is Bourrit's account.[2] To what extent is the record verified by Dr. Paccard?

"On September fifteenth, 1784, Le Grand Joras (Lombard Meunier) and Marie Couttet started to join M. Bourrit at the Grua. His other guides were François Gervaix, Cuignet or Cuidet, from La Grua, and another, having with him Maxime and François of Sallanches. They had supplied themselves with food from Chamonix and Sallanches, and went to sleep on the sixteenth at the highest huts near the Bionnassay glacier, and on the left bank of the stream. They crossed it at 1.30 a.m. by the light of a candle carried in a paper bag, and went up to the foot of Pierre Ronde, where a fire was lighted, and there waited for day. At dawn Marie Couttet and François Gervaix separated from the rest, and turning to the left in the direction of Chamonix, went on the arête behind the one seen from our halting place. They then crossed a snow couloir, and went up the next following

[1] "Travels in Switzerland," William Coxe, 1789, vol. ii. p. 13.

[2] Bourrit, "Nouvelle Description des Glacières," 1787, vol. i. c. 27.

arête, reaching its summit. They could not have ascended by the first arête on account of the overhanging rocks of the Aiguille du Goûter. When at the top of the second arête they were seen against the snow, and dislodged a large number of stones—at that moment the clock at Les Ouches was striking twelve. Le Grand Joras (Lombard Meunier) saw them from the top of the rognon which is above the glacier of La Gria (Griaz).

"M. Bourrit was on the top of Pierre Ronde at the foot of the glacier. He came to the side of the glacier of La Gria at the foot of the Aiguille du Goûter, which the others had ascended. He had a headache, felt extremely cold about eight a.m., and was very pale. He made a sketch of the valley of Chamonix, and after an hour came down again to Pierre Ronde to rest. Joras thinks he saw the two travellers again in the hollow which is behind the Aiguille du Goûter; they appeared to be ascending the slope which joins the snow summit of the Glacier de Bionnassay. They say they were six hours above the Aiguille du Goûter, but this is wrong, as they returned by daylight to the foot of Vausa (Voza); that they were within ten toises of the rock (60 feet) at the base of the Grand Mont Blanc behind the second; that they rounded the Grand Mont on the Bonhomme side, where the slope is too steep and would require step cutting; that the slope at the head of the Glacier des Bossons is good, but that one cannot get up the snow crests of the peaks of the central chain towards the Aiguille du Midi; that they did not suffer from heat at all, and came down like birds; and that it would be possible to erect a hut

on the Aiguille du Goûter, which is composed of flat slates.

"M. Bourrit descended to Bionay, having taken some milk at Bionnassay; François Gervaix joined him at half-past seven, and related his adventures. Marie Couttet went straight home, while M. Bourrit waited at Sallanches to hear what Couttet had to say, and then set out for Geneva."

Now the accounts of Bourrit and Paccard are practically identical. There are some small discrepancies of little importance. Bourrit says that it was eleven p.m. when he was roused by the return of the two adventurers from Mont Blanc; Paccard, that it was half-past seven. Bourrit that his party consisted of six persons; Paccard of seven, and gives the name, not of Maxime only, but of François of Sallanches. If the expedition had been successful both Chamonix and St. Gervais would have shared in the triumph, for both places were adequately represented. It is clear that each thought the ridge of the Bosses impracticable, because it required step cutting, a process with which all the pioneers of that time were very imperfectly acquainted; and it is interesting to note that both were of opinion that a hut might be built on the summit of the Aiguille du Goûter, a suggestion which was in fact carried out, but not until seventy years later.

The expedition was remarkable, and the height attained might well have given the pioneers a reasonable hope of ultimate success. Bourrit went into raptures about it. It was manifest that the explorers were getting on. The great mountain might be ascended both by the northern

and western sides, but as yet it was unconquerable and unconquered.

Bourrit wrote to Saussure from Sallanches, and the Genevese physicist immediately determined to undertake the enterprise. He was not an easy man to move, being before all things a man of science; barometers, thermometers, and all kinds of scientific instruments were as the breath of his life. Again, the season was getting late, and he dreaded the short days. However his usual guides, Pierre Balmat and Jean Marie Couttet, were to make some preliminary investigations. The winters of 1784 and 1785 having been extremely severe, and the summer of the latter year cold and stormy, an immense quantity of snow had fallen, and hence the attempt was postponed till the autumn.

On the fourth of September, 1785, Jean Marie Couttet and Lombard Meunier made a further journey of discovery. They slept high up on the rocks on the north side of the Bionnassay glacier, and the next morning reached the summit of the Dôme, as Coxe tells us; or the Aiguille du Goûter only, according to M. Durier, where terrible wind and hail storms forced them to return. Saussure then took the matter in hand. It is clear that he desired to be accompanied only by his guides, but Bourrit insisted on being one of the party, and Saussure, in consideration of Bourrit having discovered the St. Gervais route,[1] agreed. Bourrit also brought his son with him, a young man of twenty-one,

[1] But see p. 36.

"whose scientific attainments were of no ordinary character." [1]

On the twelfth of September, 1785, the whole party arrived at the chalet of Battandier, a comfortable peasant of Bionnassay, who received them with the utmost cordiality. Science, as M. Durier truly says, "is a great lady who cannot travel without much baggage." On the morning of the thirteenth a caravan of seventeen persons started from the village, carrying thermometers, barometers, hygrometers, electrometers, and all the various munitions of mountaineering warfare. Saussure intended the party to sleep in tents at the highest possible elevation, but Bourrit had ordered some of the guides to construct a stone cabin at the foot of the Aiguille du Goûter (really on the summit of the Tête Rousse), in and near which the whole party passed the night. The remnants of this cabin still exist, for I used it as a sleeping place in August, 1856, and again spent some hours in it in August, 1896—forty years later. It is, however, rarely used in these days, travellers by the St. Gervais route having been able for many years to pass the night in the hut on the summit of the Aiguille du Goûter. Saussure gives a charming account of his expedition. The party climbed from Bionnassay by the right bank of the glacier, and reached their new cabin in eight hours, where fresh water was found. Above them rose the Aiguille du Goûter, by which they hoped to gain the summit. Two of the guides had already climbed it, and pointed out the route. On their right was a great snow summit (clearly the

[1] Albert Smith, 1853, p. 76.

Aiguille de Bionnassay), from which masses of ice fell from time to time. The leader spent the afternoon and evening in making scientific observations, the weather being brilliant, and the temperature two and a half degrees above freezing point. They had a good fire, branches of fir formed the roof of their sleeping place, an open umbrella served as a door, and they had carried up mattresses from Bionnassay.

Bourrit and his son were troubled with the rarity of the air, were unable to digest their dinner, and had no appetite for supper. Saussure, on the other hand, passed an excellent night, and watched from his bed a glorious moonrise. The following morning a start was made at six o'clock with every hope of success. It would have been indeed but poetical justice for Saussure to have obtained his own reward. The Aiguille du Goûter seemed to him to be inaccessible, but the guides re-assured him, saying that the ascent from Bionnassay to the cabin was more difficult and perilous than from the cabin to the summit of Mont Blanc, so he proceeded full of hope and courage.

He tells of a rapture almost puerile when recognising the Lake of Geneva. On attacking the Aiguille they were surprised to find a stranger also climbing in their direction, but they recognised with a cry of joy the guide Cuidet, who had accompanied Bourrit the previous year, and who with Jean Marie Couttet had got so near the summit. Cuidet was so anxious to form one of the party that he had climbed all the night alone to be able to join them ! He took his share of the baggage and his place

in the caravan. The travellers appear to have relied upon the guides to a far greater extent than the modern mountaineer. Each walked between two guides and between two alpenstocks, "a barrier which advanced with them, and kept them from any kind of danger." They traversed the now well-known couloir and took to the rocks, where they found their task laborious enough, the rocks being very loose, and Saussure was at times obliged to seize the leg of the guide in front, the climb being so steep that it was on a level with his head.

Things became worse on nearing the summit of the Aiguille, the snow was soft, and the party took a rest and sent Pierre Balmat forward to reconnoitre. He returned in an hour and reported that the fresh snow was so great that it was impossible to reach the summit without danger and extreme fatigue, so with great regret this expedition also was abandoned. The party descended to the cabin, and Bourrit and his son to Bionnassay, but Saussure spent another night there, and made several interesting observations before returning to Geneva.[1]

Coxe says that the party reached the summit of the Dôme du Goûter,[2] but this is manifestly a mistake. Saussure's narrative makes it clear that even the summit of the Aiguille du Goûter was not reached; but this was the first occasion when a scientific ascent was made, and any observations of real value either attempted or obtained.

An effort of such importance naturally engaged the

[1] "Voyages dans les Alpes," 1786, 8vo, vol. iv. c. 52.

[2] William Coxe, "Travels in Switzerland," vol. ii. p. 14.

keenest attention of the observing Paccard, and the following record is perhaps the most careful and the most valuable to be found in his volume of manuscript :—

"*Voyage de M. de Saussure.*—On September 11th, 1785, Marie Couttet, Jean Michel Tournier, and François Folliguet, started to construct a hut at Pierre Ronde. The weather was bad, and in the evening snow fell near the hut. The bad weather continued on Monday until noon, when they had completed the hut, which faces the lower side of the vertical part of the Glacier de la Gria where M. Bourrit went the previous year. The next morning they started at 6.20 to meet M. de Saussure at Bionnassay at the house of Battandier, which they reached at eight o'clock. Thence they started again, reaching the hut at five p.m. They carried two palliasses. Two other men carried about fifty pounds weight of wood, sufficient for a moderate fire for two nights. Two others carried six sheets, five blankets, and three pillows. Two carried provisions, and one the roof of the hut. The latter one with the wood carriers went down, leaving twelve who ascended the Aiguille, namely, Professor de Saussure, MM. Bourrit, father and son, Pierre Balmat, Marie Couttet, Joras, Jean Michel Tournier, François Folliguet, Jean Pierre Cachat, François Cuidet of the Grua, Nicolas Gervaix, and another of Bionnassay. There is room for five in the hut, which is covered with flat stones. The others spent the night outside ; a fire was lighted about eighteen feet from the hut. After M. de Saussure had retired to bed the others spent the night quietly, with the

exception of young M. Bourrit, who suffered from mountain sickness. They started the next morning (the fourteenth) at 6.20, reached the foot of the Aiguille du Goûter at 8.30, and ascended until eleven o'clock by the arête which is seen from Chamonix, and thence by the arête which is behind, towards the glacier of Bionnassay after crossing two couloirs. There the Aiguille is much steeper. M. de Saussure sent off at eleven o'clock two men (Pierre Balmat and Cuidet) to find out the way. They were absent one hour and fifteen minutes. Pierre Balmat shouted from the top that there were two feet of fresh snow on the ground. M. de Saussure, who has always shown a dislike for snowy tracks—though he was a good walker on rocky ground—decided to make experiments where he was. All were glad of it except young Bourrit, who so far had only taken a little brandy and water, and wished to go on higher. M. de Saussure observed the barometer several times. It gave him a height of 1,900 toises above the sea (1,905 toises according to a letter he wrote to me). This appears to me strange, as it left but 526 toises more for the height of Mont Blanc, whilst from the level of the Brévent to where the party were there would be 617 toises, and 100 toises more to the top of the Goûter, whilst from the top of Brévent, which is 1,287 toises above the sea, the height of Mont Blanc above the Goûter appears to be at least double that of the Goûter above the Brévent. Perhaps Mont Blanc is higher than is generally believed; its distance may make it appear deceptive. M. de Saussure also observed the electrometer. They came down about

noon, and were seen at four p.m. crossing a snow slope at the base of the Aiguille, where rocks pierce through the snow, behind and above the glacier of la Gria. M. de Saussure was tied like a prisoner in coming down, with a rope under the arms, to which François Folliguet was attached in front and Pierre Balmat behind. Couttet was in front to mark the steps. M. Bourrit was held by the collar of his coat by Tournier, and was leaning on the shoulder of Gervais. In the difficult places a barrier was made by a baton, on which M. de Saussure was able to lean, both going up and descending. Young M. Bourrit, almost ill, ascended by holding to Cuidet's coat. They ate bread and drank wine and water coming down, and reached the hut at six p.m. Accounts were settled, and the two Bourrits started with the guides, who brought down the luggage to Bionnassay. The next day they reached Chamonix about ten a.m. M. de Saussure remained with Pierre Balmat, Couttet, Cachat, and with all the bedding and clothing. M. de Saussure made barometric and thermometric observations on the fifteenth. The hut is a little lower than the Buet. He took levels and collected more than forty lbs. weight of stones from the Aiguille du Goûter and Pierre Ronde, and four or five plants. They left at seven o'clock, going down leisurely to Bionnassay, which was reached at one o'clock, where they had a good dinner. M. de Saussure, with Pierre Balmat, went on to sleep at Sallanches, and the others to Chamonix. Each guide had six francs a day, and M. de Saussure, who paid everything, spent 15 louis (25 francs each). He had come incognito from

Geneva, pretending that he was going to the little Saint Bernard."

This account of Dr. Paccard is invaluable for its directness, simplicity, and truth, being no doubt written after careful conference with the guides. It tallies in almost every detail with that of Saussure, but gives, which the latter does not, the names of all but one of the guides employed.

It shows that the early explorers were provided not only with blankets, but also with sheets and pillows, luxuries unknown to the modern mountaineer; and the length of time that a large and unwieldy party took to attain moderate elevations. It is also an amusing picture of the extraordinary bodily assistance which the guides were then called upon to render to their employers.

The interest taken in the ascent now became keener and keener. Saussure having assaulted the mountain in person, men began to believe that the end was not far distant. The illustrious adventurer ordered another cabin to be constructed on the western side at a higher elevation than Bourrit's hut. He still believed the summit inaccessible; but if it were ever to be attained it would be by the western route and no other. But here the jealousy of the Chamoniards came in; no way could possibly be easier than that which commenced at their own doors! Why should a route be attempted which involved going by the Col de Voza to Bionnassay before the ascent could be begun? Again, was not the mountain their exclusive property? What business had the St. Gervais hunters to interfere with their vested rights?

Would that this ignoble jealousy had distinguished the men of Chamonix only at that time! They got anxious and even angry. True it was, unhappily, that the St. Gervais men had first discovered the western route by which, and by which only according to Saussure, the summit could be conquered. The prize should not slip from their grasp without an effort. To begin with, which route was the shorter? To satisfy themselves six guides of Chamonix determined to solve the problem. Opinions differ as to the date of this adventure. Saussure says the eighth of June, 1786. M. Durier gives the thirtieth of June, 1786, and says that "all other writers have copied the date given by Saussure, which is not only unlikely as being too early in the season, but is contradicted by the evidence of Jacques Balmat." But Paccard's manuscript, which ought to be conclusive, gives the eighth. The tryst of the two parties was the summit of the Dôme du Goûter. It is certain that those who started from the Chamonix side reached the rendezvous an hour and a half sooner than those who started from the western side, and therefore the question of time was decided in favour of the former. The whole party then proceeded towards the Bosses du Dromadaire, but were stopped by the sharpness of the arête which had foiled their predecessors; and it is remarkable that this celebrated ridge was not traversed, at least by travellers, until the expiration of seventy-three more years,[1] but it is now the ordinary route from the Chamonix side. The

[1] NOTE.—M. Durier says that the arête of the Bosses was followed to the summit by Chamonix guides about the year 1839.

party were disconsolate at finding the arête so narrow and the precipices so steep that it was impossible to proceed in that direction. They carefully examined the different approaches to the summit, and unanimously concluded that by the side of the Dôme du Goûter it was absolutely inaccessible. With one exception they all immediately returned to Chamonix by the Montagne de la Côte, utterly discontented, and to add to their troubles encountered a storm of snow and hail on their way down. Dr. Paccard's record is as follows :—

"On June 7th, 1786, Joseph Carrier, Jean Michel Tournier, and François Paccard left Chamonix to go and sleep in a hole on the Montagne de la Côte, where they were joined by *Joseph* Balmat des Baux (a mistake in the Christian name). They started very early in the morning for Mont Blanc. On the same day Pierre Balmat and Marie Couttet had slept at the Pierre Ronde above Bionnassay and started also on the same eighth of June to go up Mont Blanc from the Bionnassay side. Those who started from the Montagne de la Côte were the first to reach the rock which they say is to the rear at the base of the summit of Mont Blanc. They state that it is impossible to go from there up to the last summit. On one side precipices above the Allée Blanche; on the other, straight slopes cut off sharply and protected by chasms. It would seem that from that spot one would be able to go more easily from behind the Aiguille du Midi. A stone cairn was erected on the rock near the top of the second Mont Blanc (Dôme du Goûter). . . . They did not find the stone man which

Cuidet and Couttet were supposed to have erected; on the contrary, not a single stone appeared to have been shifted out of its place on the rock which Couttet pointed out as the one on which the stone man had been built. They arrived before those from Bionnassay, whom they saw on the Aiguille du Goûter looking like two chamois. They called out to them and heard their answers, but they were evidently very tired, nearly all experienced a kind of faintness. One of them got better after drinking a little fresh water found on the rocks. The others went down, as the weather turned out bad and hail was falling. They arrived at ten p.m., going down almost from the top of the Montagne de la Côte in the dark. *The one from the Baux, who lagged a good deal behind,* was on the snow still when darkness came on, and was following the steps of the others who went down to their knees in the snow, which was hard in the morning. Having noticed by means of his baton a crevasse which the others had jumped, he did not dare to go on, but putting his bag under his head, lay down and spent the night on the snow; his clothes were quite frozen the next morning. Most of them were burned by the sun, Tournier being as red as fire. The skin peels off after a few days like scales."

So ended the unsuccessful attempts to climb the great white mountain. It had foiled the ablest guides of Chamonix and of St. Gervais, and there was no claimant for Saussure's reward. Man was beaten by the mountain but his victory was very near. The period of endeavour was drawing to a close. The time of conquest was setting in.

CHAPTER IV

THE CONQUEST OF MONT BLANC BY MICHEL GABRIEL PACCARD AND JACQUES BALMAT

The Story told by Alexandre Dumas

JACQUES BALMAT was born on the nineteenth of January, 1762. An account of the circumstances which led him to attack the mountain, of his various unsuccessful attempts to gain the summit, and of his ultimate victory, was not made public until nearly half a century after the victory was gained. How this account came to be written we shall see further on. It was in fact dictated by Balmat to the illustrious Alexandre Dumas when he visited Chamonix in 1832. The narrative is so graphic and, as will be seen, dramatic, that whether it can be absolutely relied upon or not, it must be given as it stands, freely translated from Dumas' "Impressions de Voyage Suisse."

"In those days I really was something worth looking at. I had a famous calf and a stomach like cast-iron, and could walk three days consecutively without eating, a fact I found useful to me when lost on the Buet. I



Jacques Balmat, from Michel Carrier's book.

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munched a little snow—nothing more. Every now and then I cast a sidelong look at Mont Blanc and said to myself, 'My fine fellow, whatever you may say or whatever you may do, I shall get to the top of you some day. You will not escape me!' Night and day this thought kept running in my brain. By day I used to climb the Brévent, whence Mont Blanc can be seen to such advantage. I passed hours there searching with eagerness to discover a route. 'Bah!' said I, 'if there is no way up the mountain I must make one, for up I must go.' At night everything was changed. No sooner were my eyes closed than I found myself 'en route,' and went along as gaily as if there had been a royal road to the summit. 'Upon my word,' I would say to myself in my dream, 'I was a fool to think Mont Blanc was a difficulty.' Then little by little the way would get narrower, but still there was a good footpath like the one up the Flégère. I would keep on and come at last to where there was no road at all, and then stumbling on in unknown regions, the ground would move and swallow me up to the knees. 'Never mind,' I would say, and go struggling on—how stupid one is in a dream!—I should get out at last, but have to go on all fours as the way became steeper and steeper and everything worse and worse. I would plant my feet on pieces of rock and feel them shake like loose teeth, and the sweat would fall from me in great drops. I felt stifled and as if I had nightmare. Never mind, keep going! I was like a lizard on a wall. I saw the earth sinking away beneath me. It was all the same, I only looked at the sky. All I cared for was to reach the top;

but my legs, my grand legs, failed me, and I could nc longer bend them. I would catch at the stones with my nails and feel that I was going to fall, and then would say to myself, 'Jacques Balmat, my friend, if you don't catch hold of that branch your time has come.' I shall always remember that accursed branch ; one night I touched it with the tips of my fingers, and drawing up my legs as if I were rowing, clutched it, saying, 'Now I have you ! now all will go well.' At that moment I was awakened by a vigorous box on the ear by my wife, and, would you believe it, I had caught hold of her ear and was tugging at it as if it were indiarubber.

"After that awakening I felt that the time for action was come, and I determined on leaving my bed to set to work in earnest. I began by putting on my gaiters. 'Where are you going?' said my wife. 'To look for crystals,' I replied, 'and don't be uneasy if I don't come back to-night ; if I am not home by nine o'clock I shall be sleeping somewhere on the mountains.' I did not want her to know my intentions. I took a stout alpen-stock tipped with iron, double the length and thickness of an ordinary one, filled my gourd with brandy, put some bread in my pocket, and set off.

"I had already made several attempts to climb the mountain by the Mer de Glace, and had always been stopped by the Mont Maudit. I would sometimes try by the Aiguille du Goûter, but thence to the Dôme there was a kind of arête about a quarter of a league long and one or two feet wide and more than 1,800 feet in depth. 'No, thank you, not that way,' I said. I therefore deter-

mined this time to change the route, and went by the Montagne de la Côte. At the end of three hours I reached the Glacier des Bossons. No great difficulty there. Four hours after that I arrived at the Grands Mulets. 'Well,' I thought, 'now I deserve some breakfast,' and I took a bit of bread and a sup from my gourd. That was good!

"At this time there was no level ground at the Grands Mulets, and you may fancy it was not over comfortable. I was getting uneasy as to finding a place higher up to pass the night and was alarmed at seeing none, so determined to go further and trust to Providence. At the end of two hours and a half I found a capital place, hard and dry, where the rocks came through the snow and gave me a space of about six or seven feet to lie on, not to sleep however, but to sit upon and wait for daylight, with rather more comfort than lying on the snow. It was now about seven o'clock in the evening, so I broke off my second piece of bread, drank another drop of Cognac, and settled myself on the rock where I should have to pass the night. It did not take long to make my bed. About nine o'clock the mist began to rise like a thick smoke from the valley, and in half an hour it reached and enveloped me; but I was still cheered by the light of the last rays of the setting sun, which had scarcely left the highest summit of Mont Blanc. I followed them with my eyes as long as I could, but at last they disappeared and the day was done. My face was turned towards Chamonix. At my left lay a huge plain of snow which reached up to the Dôme du Goûter. At my right,

and only a few paces distant, was a precipice of about 800 feet. I did not dare to sleep for fear of rolling down this abyss in a dream. I seated myself on my knapsack and began to knock my hands and feet together to keep them warm. Soon the moon rose, pale and surrounded by clouds which nearly hid her till eleven o'clock. I saw at the same time a hateful cloud come rolling down from the Aiguille du Goûter, which no sooner reached me than it lashed my face with snow.

"I covered my face with a handkerchief and said, 'All right, go on; don't mind me.' I heard the falling avalanches rolling and grumbling like thunder. The glaciers cracked, and at every crack it seemed to me as if the mountain moved. I felt neither hungry nor thirsty, but had a violent aching in my head which began at the top and reached to the eyebrows. All this time the fog was as thick as ever. My breath was frozen and my handkerchief and my clothes were soaked with snow, and soon I felt as if I were stark naked. I moved my hands and feet faster, and began to sing to drive away the thoughts that were seething in my brain. My voice seemed to die away in the snow, no echo replied; everything was dead in this ice-bound world and the sound of my own voice almost terrified me. I became silent and afraid. At two o'clock the heavens grew white towards the east, and with the dawn my courage revived. The sun was fighting with the clouds which covered Mont Blanc, and I hoped every moment that he would disperse them, but about four o'clock they grew thicker. The sun was blotted out, and I began to fear that my enterprise

must be abandoned for that day. In order to make some progress, even if the ascent should prove impossible, I began to explore the neighbourhood of my rock and spent the whole day on the glacier looking for the best routes. As evening approached, and with it the mist, I descended as far as the Bec à l'Oiseau,[1] where night overtook me. This night was passed more agreeably than the last. I was not on the ice, and was able to sleep a little; but I awoke quite benumbed, and as soon as daylight appeared I crept down to the valley, having promised my wife that I would not be away more than three days. My clothes did not thaw till I reached the village of La Côte. I had hardly gone a hundred steps past it, when I met François Paccard, Joseph Carrier, and Jean Michel Tournier, three guides; they had their knapsacks and alpenstocks with them and wore their climbing clothes. I asked where they were going, and they said in search of kids which had strayed from the children who had been watching them. As these animals are of little value, I felt that the men were trying to deceive, and at once surmised that they were about to attempt the journey which I had just failed to achieve. M. de Saussure had promised a reward to the first man who should gain the summit. Paccard putting one or two questions to me, such as where one could sleep on the Bec à l'Oiseau, my surmise was confirmed. I replied that snow lay everywhere and to find a good sleeping place was not possible. I saw that he exchanged signs with the others, which I pretended not to notice. They turned aside and consulted together, and

[1] A rock high up on the Montagne de la Côte.

ended by proposing that I should join them and that we should all ascend the mountain together.

"I agreed, but said that I must first go home, as I had promised, so as not to break faith with my wife. I went and told her not to be uneasy at another absence. I changed my stockings and gaiters, took some provisions and started at eleven o'clock the same night without taking any rest. At one o'clock I found my comrades at the Bec à l'Oiseau, about four leagues below the place where I had slept. They were sleeping like marmots. I awoke them, and all four began the march upward. That day we crossed the glacier of Taconnay and reached the Grands Mulets, where two days previously I had passed such a dreadful night. We turned to the right, and at three o'clock were on the Dôme du Goûter. One of us (Paccard) had begun to be out of breath after the Grands Mulets, and now lay down on one of our coats. On reaching the top of the Dôme we saw something black moving on the Aiguille du Goûter, and could not tell whether it was a man or a chamois. We cried out and some one replied. Then after a minute we kept silent, and then words came, 'Hallo, you fellows, stop a bit, we want to climb with you.' We waited for them, which enabled Paccard to reach us, having recovered his powers. At the end of half an hour the others joined us. They were Pierre Balmat and Marie Couttet, who had made a bet that they would be on the Dôme du Goûter before my companions. They lost their wager. Meantime I had been using the time to explore, and had gone nearly a quarter of a league, almost sitting astride on the top of

the arête which joins the Dôme du Goûter to the top of Mont Blanc. It seemed a path fit only for a rope-dancer, but I did not care, and I believe that I should have reached the top if the Pointe Rouge had not barred the way. As it was impossible, however, to get past that, I returned to the spot where I had left my companions; but found nothing but my knapsack. Convinced that they could not get up Mont Blanc that day, they had gone down to the valley, no doubt saying 'Balmat is very active and will soon overtake us.' Finding myself alone, I hesitated for a moment between the desire of following them and the longing to attempt the ascent by myself. I was vexed at their departure, but felt that this time I might be successful, so determined to try. I shouldered my knapsack and started. It was now four o'clock. I crossed the Grand Plateau and came to the Brenva glacier, from which I could see Courmayeur and the Valley of Aosta in Piedmont. Clouds being on the top of Mont Blanc, I did not attempt to climb up, less from the fear of getting lost, than from the certainty that the others, unless they could see me, would never believe that I had reached the summit. I profited by the little daylight still left to seek some place of shelter, but after an hour's search found nothing, and, remembering my recent experience, determined to return. I began my descent and reached the Grand Plateau. As I had not then learnt, as I have since done, the use of a veil to preserve my eyes, they became so fatigued by the constant glare of the snow that I could distinguish nothing, but seemed to see patches of blood around me. I sat down

to rest, shut my eyes, and let my head fall between my hands. After half an hour my sight was restored, but night was setting in, and as there was no time to be lost I got up and set off. I had not gone many steps when my baton showed that there was no ice below me. I had come to the edge of the great crevasse in which three men had died and out of which Marie Couttet had been pulled up. 'Ah!' I said, 'is that you?' We had, in fact, crossed it in the morning on an ice bridge covered with snow. I searched for it, but as the night became darker could not find it. My sight became worse, the aching in my head returned, I felt no desire for food or drink and was miserably sick and ill.

"Obliged to remain near the crevasse till daylight, I put my knapsack on the snow, covered my face with my handkerchief and prepared as best I could to pass another dreadful night. As I was now about two thousand feet higher the cold was more piercing. A fall of fine snow froze me, irresistible drowsiness came over me and thoughts of death passed through my mind. These were evil signs, and I knew that if I had the bad luck to close my eyes they might never re-open. From my perch I could see, ten thousand feet below me, the lights of Chamonix, where my late comrades would be sitting by their firesides or lying snugly in bed, and said to myself, 'Very likely not one of them has a thought to spare for me! Perhaps one may say, while he is poking his fire or drawing his bedclothes over his ears, "That fool Jacques is very likely knocking his feet together up there!"' I felt no lack of courage, only of strength. No

man is made of iron, and I felt far from cheerful. During the short intervals between the crash of avalanches I heard distinctly the barking of a dog at Courmayeur, though it was more than a league and a half to that village from the spot where I was lying. The noise served to distract my thoughts, for it was the only earthly sound that reached me. About midnight the barking ceased, and nothing remained but the deathly silence of the grave. The noise of the glaciers and avalanches could reassure no human being, they could only frighten him. At two o'clock appeared on the horizon that same white line I had formerly observed, and the sun followed as before. Mont Blanc had his nightcap on, and when such is the case he is in a bad temper and no one dare approach him. I knew his disposition and was sufficiently warned, and began my descent into the valley. I was despondent, but not disheartened by these two vain attempts, but felt quite certain I should be more fortunate a third time. Five hours more and I was back in the village. It was eight o'clock. All was right at home ; my wife gave me something to eat, but I was more sleepy than hungry. She wanted me to lie down in the bedroom, but I was afraid of being tormented by the flies, so I went into the barn, stretched myself upon the hay and slept without waking for twenty-four hours.

"Three weeks passed without any favourable change in the weather taking place, and without in the least lessening my desire to try again. Dr. Paccard, a relative of the guide I have spoken about, desired this time to accompany me, and we agreed to set out on the first fine day.

At last, on the eighth of August, 1786, the weather seemed sufficiently settled to venture. I went to Paccard and said, 'Well, Doctor, are you determined? Are you afraid of the cold or the snow or the precipices? Speak out like a man.' 'With you I fear nothing,' was his reply. 'Well then, the time has come to climb the molehill.' The Doctor said that he was quite ready, but just as he shut the door of his house I think his heart failed him a little, for he could not get the key out of the lock and kept turning it first one way and then the other. 'I say, Balmat,' he said, 'if we did the right thing we should take two guides.' 'No,' I replied; 'either you and I go together, or you go with the others. I want to be first, not second.' He thought for a moment, drew out the key, put it in his pocket, and with his head bent down followed me mechanically. In about a minute he gave himself a shake and said, 'Well, I must trust to you, Balmat.' 'Forward,' said I, 'and let us trust to Providence.' He tried, but could not sing in tune, which annoyed him. I took him by the arm, and said, 'This project must be known to ourselves only.' We were obliged, however, to take a third person into our confidence. This was the shopkeeper from whom we bought some syrup to mix with the water we should carry. Brandy and wine would have been too strong for such an expedition. As the woman was suspicious we told her everything, and asked her to look out next day on the Dôme du Goûter side about nine o'clock in the morning, as we hoped to be there then. We made all our arrangements, took leave of our wives, and set off about five

o'clock in the evening, one taking the right and the other the left side of the Arve so that we might not attract attention. We met again at the village of La Côte. The same evening we slept on the top of La Côte, between the glaciers of Bossons and Taconnay. I carried a rug and used it to muffle the Doctor up like a baby. Thanks to this precaution he passed a tolerable night. As for me, I slept soundly until half-past one. At two the white line appeared, and soon the sun rose without a cloud, brilliant and beautiful, a promise of a glorious day! I awoke the Doctor and we began our day's march. At the end of a quarter of an hour we were struggling with the glacier of Taconnay, a sea full of great crevasses whose depth could not be measured by the eye. The snow bridges gave way under our feet. The Doctor's first steps were halting and uncertain, but the sight of my alertness gave him confidence, and we went on, safe and sound. Then began the ascent to the Grands Mulets, which was soon left behind. I showed the doctor where I had passed the first night. He made an expressive grimace, and kept silent for ten minutes; then, stopping suddenly, said, 'Balmat, do you really think we shall get to the top of Mont Blanc to-day?' I saw how his thoughts were drifting, and laughingly answered him, but gave no promise. Ascending for about two hours we came to the Plateau, where the wind became more and more boisterous, and arrived at last at the projecting rock known as Les Petits Mulets, when a gust of wind carried off the Doctor's hat. I turned round on hearing his cry, and saw the felt hat careering down the mountain towards Courmayeur.

With his arms stretched out he looked after it. 'We must go into mourning for it,' I said; 'you will never see it again for it has gone to Piedmont, and good luck be with it!' It seemed as if my little joke had given offence to the wind, for my mouth had scarcely closed when a more violent gust obliged us to lie down on our stomachs to prevent our following the hat. For ten minutes, rise we could not. The wind lashed the mountain sides and passed whistling over our heads, driving great balls of snow almost as big as houses before it. The Doctor was dismayed, but I only thought of the shopwoman we had told to look out for us about this time on the Dôme du Goûter. At the first respite I rose, but the Doctor could only follow on all fours; we then came to a point from which we could see the village. Taking out my glass, there, twelve thousand feet below, was our gossiping friend and fifty others snatching a glass from hand to hand to look at us. Considerations of self-respect induced the Doctor to stand up, and that moment we saw that we were recognised, he by his big coat, and I by my ordinary clothes. They made signs to us by waving their hats. I replied by waving mine, but alas, the Doctor's had already taken leave. Having used up all his strength in getting on his feet, neither the encouragement from below, nor my own earnest entreaties could induce him to continue the ascent. My eloquence exhausted, I told him to keep moving so as not to get benumbed. He listened, without seeming to understand, and replied, 'All right.' I saw that he was suffering from the cold, while I also was nearly frozen. Leaving him the

bottle, I went on alone, saying that I should very soon come back to find him. He answered, 'Yes! yes!' and telling him again to be sure not to stand still, I went off. I had hardly gone thirty paces when, on turning round, I saw him actually sitting down on the snow, with his back turned to the wind as some precaution. From that time onward the route presented no very great difficulty, but as I rose higher the air became much less easy to breathe, and I had to stop almost every ten steps and wheeze like one with consumption. I felt as if my lungs had gone and my chest was quite empty. I folded my handkerchief over my mouth, which made me a little more comfortable as I breathed through it. The cold got worse and worse, and to go a quarter of a league took an hour. I kept walking upward, with my head bent down, but finding that I was on a peak which was new to me, I lifted my head and saw that at last I had reached the summit of Mont Blanc!

"I looked round, trembling for fear that there might yet be further some new unattainable aiguille. But no! no! I had no longer any strength to go higher; the muscles of my legs seemed only held together by my trousers. But behold I was at the end of my journey; I was on a spot where no living being had ever been before, no eagle nor even a chamois! I had come alone, with no help but my own will and my own strength. Everything around belonged to me! I was the monarch of Mont Blanc! I was the statue on this unique pedestal! Ah, then I turned towards Chamonix and waved my hat on the end of my stick. I could see through my

glass the response. My subjects in the valley perceived. The whole village was gathered together in the market-place.

"When my first moments of exultation were over, my thoughts turned to my poor Doctor, and I went towards him as quickly as I could, calling out his name and getting greatly alarmed at hearing no reply. In a quarter of an hour, I saw him far off rolled up like a ball, but he was quite immovable and made no reply to the shouts which he must certainly have heard. I found him doubled up with his head between his knees, just like a cat when she makes herself into a muff. Tapping him on the shoulder, he raised his head, and I told him that I had been on the top of Mont Blanc. Even this did not interest him; he only asked, 'Where can I lie down and go to sleep?' I told him he had started to go to the top of the mountain and there he would have to go. I lifted him up from the ground, took him by the shoulder and forced him forward several steps. He seemed quite torpid, and to care neither whether he went up or down. However, his blood seemed to circulate a little more freely after my efforts, and he asked if there were more gloves like those on my hands, which were of hareskin and made especially for this excursion, without fingers. At that moment I would not have parted with both of them even to my brother, but I gave him one. Shortly after six o'clock we were on the summit and, though the sun shone brilliantly, we saw stars shining in the deep blue sky.

"Beneath was nothing but gaunt peaks, ice, rocks, and

snow. The great chain which crosses the Dauphiné and stretches as far as the Tyrol was spread out before us, its four hundred glaciers shining in the sunlight. Could there be space for any green ground on the earth ? The lakes of Geneva and Neuchâtel were specks of blue on the horizon. To the left lay the mountains of my dear country all fleecy with snow, and rising from meadows of the richest green. To the right was all Piedmont, and Lombardy as far as Genoa, and Italy was opposite.

" Paccard could see nothing, but I felt no fatigue and scarcely noticed the difficulty of breathing which had an hour before so oppressed me. We stayed thirty-three minutes, until seven o'clock in the evening, and as there would only be two hours and a half more daylight, I began to descend, taking Paccard under his arms, and waving my hat as one last signal to those in the valley. There was no track to guide us, and the wind was so piercingly cold that the snow remained frozen, and we could only see the little round holes which the iron points of our Alpenstocks had made. Paccard was like a child, no energy or will. I guided him along the good places, and pushed, or carried him, along the bad. Night came on, and when we had crossed the crevasse at the foot of the Grand Plateau we were in the dark. Paccard stopped every few minutes, saying he could go no further, and I had to make him, not by persuasion only, but by brute force. At eleven o'clock we left the ice and set foot on solid ground, having lost all the sun's reflected light for more than an hour. Then I allowed Paccard to stop, and was just going to wrap a rug around

him when I saw that he could not move his hands. I asked him about them, and he replied that they were useless and with no feeling in them whatever. I took off his gloves, and found his hands were dead white, and my own hand also from which I had taken the glove was quite numb. I said, 'Well, we have three frost-bitten hands between us.' He did not mind, but only wanted to lie down and sleep. He told me, however, to rub them with snow, and that was easily done. I began by rubbing his hands and finished by rubbing my own. Soon sensation returned, but accompanied by pains as sharp as if every vein had been pricked by needles. I rolled my baby up in his rug and put him to bed under the shelter of a rock; we ate and drank a little; pressed as close to one another as possible, and fell fast asleep.

"In the morning at six o'clock I was awakened by Paccard. 'It is funny, Balmat,' he said; 'I can hear the birds singing, but can see no daylight. Perhaps because I cannot open my eyes;' and yet they were glaring like those of a horned owl. I replied that he was under a delusion and that he ought to see very well. Then he asked for a little snow, and melting it in the hollow of his hand with a little brandy, rubbed his eyelids with it. This done he saw no better, but his eyes watered profusely. 'Very well,' he said, 'having gone blind, how shall I be able to get down?' 'You must hold on to the strap of my knapsack,' I said, 'and walk behind me,' and in this way we descended to the village of La Côte. There I had to leave the Doctor, as I feared my wife would be uneasy, and he managed to get home by

feeling his way with his stick. I returned home, and then saw what I looked like. I was quite unrecognisable. My eyes were red, my face black, and my lips blue. Every time I laughed or yawned the blood spouted out from my lips and cheeks, and in addition I was half blind.

"Four days afterwards I set out for Geneva to inform M. de Saussure that I had succeeded in scaling Mont Blanc. He had already heard the news from some Englishmen. He came at once to Chamonix and tried the ascent with me, but the weather only allowed us to get as far as the Montagne de la Côte, and it was not till the following year that he carried out his great project."

Such is the statement of Jacques Balmat, which makes light of the mountaineering capacity of the Doctor, and in which the narrator poses as complete master of the situation. Further on I propose to examine Balmat's story in detail—a story open to much obvious criticism—and to consider it in the light of other records ; but before doing so, however, it will be better to proceed with the account of the ascent of Mont Blanc made in the following year (1787) by the eminent and indefatigable Saussure.

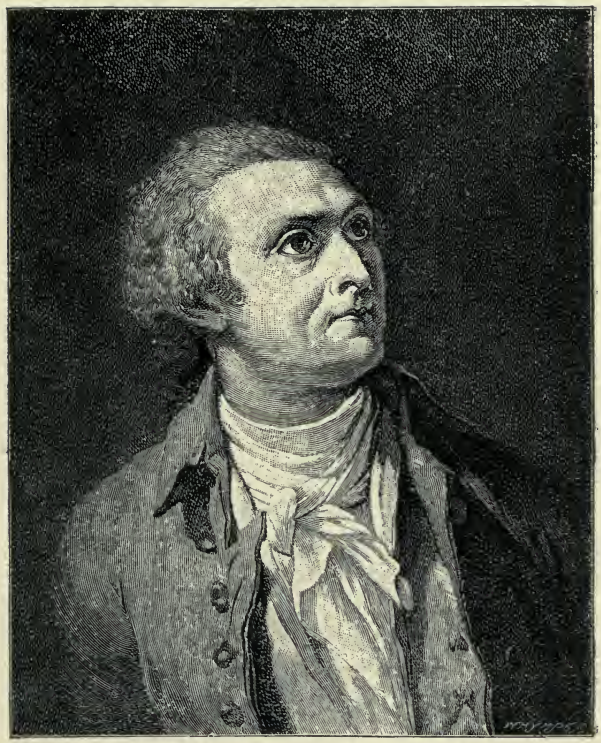
CHAPTER V

THE CONQUEST OF MONT BLANC BY HORACE BÉNÉDICT DE SAUSSURE

SAUSSURE heard with joy of the successful ascent recounted in the last chapter.[1] The report reached him at Geneva on the following day, Jean Pierre Tairraz, who kept one of the little Chamonix inns, having sent a messenger with the news. It was afterwards detailed to him at greater length by Jacques Balmat himself when he had recovered from the effects of his excursion; and who, no doubt, was not backward in claiming the reward promised for six and twenty years. Saussure at once determined to go to Chamonix and endeavour to repeat the ascent. He was by no means hopeful of the chances of success, being then forty-six years of age. However, he at once made arrangements, and on the thirteenth of August, 1786, wrote to Tairraz:—

"I am very much obliged for the trouble you have

[1] NOTE.—In the year in which this ascent was made Saussure published at Geneva (chez Barde Manget & Compagnie) a short account of his ascent. It is an 8vo pamphlet of thirty-one pages, a copy of which has been courteously placed at the author's disposal by M. Augerd of Bourg. The narrative is included in Saussure's "Voyages dans les Alpes" with many interesting additions, and from these two sources this chapter has been compiled.



Saussure, from a picture by St. Ours.

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taken in sending me an express with your letter announcing Dr. Paccard's fortunate expedition. I am delighted to hear of this, on such good authority. I gave two new crowns to the bearer, which he said was quite sufficient for his trouble.

"And now I am going to confide a little affair to you, which must be kept quite secret: I wish to attempt the same route. Not that I flatter myself that I shall be able to reach the summit, for neither the youth nor the agility of the doctor are mine, but I can at all events get high enough to make some observations and experiments of great importance. As it appears they had a great deal of trouble to cross the glacier above the Montagne de la Côte, I wish you would send off five or six men at once to level the route as much as possible. Pay them good days' wages. I leave the sum—which shall be repaid at once—to your discretion. It is most essential to procure trustworthy and hard-working men. Put Jacques Balmat, who accompanied Doctor Paccard, at the head, and pay him better than the others. They must begin by building a hut at the top of the Montagne de la Côte, which will serve them for a resting place at night and in bad weather, and it will also serve me.

"As the task will be too great for me to go at once from the top of the Montagne de la Côte to the summit, I also wish them to build another hut higher up, on some rock in the middle of the snow.

"But, in all this business, I positively forbid you to mention my name. Say everything has been ordered by a great Italian personage who wishes to be unknown. I

have most important reasons for this, and for no one to imagine that I am thinking of the attempt.

"I expect to arrive at Chamonix on Thursday or Friday next, and hope all will be ready, or at all events very forward; and that there may be no difficulties. Enclosed are two double louis to pay for the few first days' work and the wine for the men.

"I should have been indeed pleased to have lodged at your house, if my old associations with the good dame Couteran had not established engagements which I cannot break. But rest assured you shall not be a loser. If you execute my commissions with promptitude, and attend upon me as I wish, you shall not be forgotten.

"Moreover pray order, at once, a flat-sided ladder twelve or fifteen feet long. This laid down will help us in crossing the crevasses; and when set up, in scaling rocks or cliffs of ice. It must be very firm, but light enough for one man to carry. With its aid the workmen will have no need to make long detours, nor to cut the ice, wherever the ladder is longer than the crevasses, so let them take one of this length at starting. They may decide whether its poles and steps be round or otherwise, but my own must have flat steps as they will be easier for me to walk on.

"If the weather be indifferent they can still begin to build the lower hut, which should be as near to the edge of the ice as possible. In case there are no flat stones near, it can be built of pine branches with the leaves on. When these are well and thickly set, they will keep out not only the cold but also the rain.

"I could entrust this commission to several others at Chamonix, but well knowing your zeal and intelligence my confidence will not be misplaced. Moreover should success crown my attempt, I shall publish an account of it, and shall not fail to give due honour to your own important share in it, which will add not only to your reputation but to that of your inn.

"I am, my dear Jean Pierre, your affectionate

"DE SAUSSURE, *Professor.*

"GENEVA, *Sunday, Aug.* 13, 1786.

"The commission then, you will recollect, is on behalf of an Italian nobleman.

"1. To order a portable ladder with flat sides and fifteen feet long.

"2. To choose at once a sufficient number of brave workmen to build a good hut on the summit of the Montagne de la Côte, close to the glacier, in stone, or pine branches with the leaves on.

"3. They are to take a common ladder with them, fifteen feet long, and when the hut is finished, must try and ease the crossing of the glacier, by levelling the ice ridges or cutting steps where the crevasses are too large to allow them to be crossed on the ladder.

"4. After they have arranged this, let them build another hut upon some rock two-thirds or three-fourths of the distance between the first hut and the top of the mountain.

"N.B.—Settle beforehand with the workmen about their daily wages, and promise a good trinkgeld if the nobleman be content with their work."

Saussure arrived at Chamonix shortly after his letter was written. He reached the Montagne de la Côte on the twentieth of August, a few days after the memorable first ascent, but bad weather setting in, obliged him to return. Snow and rain fell continuously during that season, and any further attempt was necessarily abandoned. Saussure, however, instructed Balmat to inspect the mountain in the following June and to advise him of the moment when the ascent might seem practicable. He then went to Provence to make experiments on the seashore for the sake of comparison with others which he hoped later on to make on Mont Blanc.

The following year (1787) Balmat watched continuously and wrote to Saussure that he had been unsuccessful in the month of June, but expected better fortune in the early days of July. Saussure started for Chamonix and met Balmat at Sallanches, who told him that he had again been on the summit of Mont Blanc on the fifth of July, accompanied by Jean Michel Cachat and Alexis Tournier, a statement confirmed by Dr. Paccard's manuscript. On his arrival at Chamonix, Saussure was greeted by heavy rain, which lasted for nearly a month, but his mind was made up, and he resolved to wait the entire season rather than run the risk of failure. At length the weather cleared, and the favourable moment arrived on the first of August. The Professor was accompanied by his servant Têtu, and by eighteen guides, who carried his scientific instruments and the various other articles which he thought necessary for his ex-

pedition. His head guide was of course Jacques Balmat, the others Pierre Balmat and Marie Couttet, his companions on the previous attempt from the western side, Jean Michel Cachat and Alexis Tournier (who with Jacques Balmat had gained the summit on the fifth of July), Jacques Balmat, a servant of Madame Couteran the innkeeper, our old friend Jean Baptiste Lombard, Alexis Balmat, five guides of the well-known name of Dévouassoud, François Couttet, François Ravenel, Pierre François Favret, Jean Pierre Cachat, and Jean Michel Tournier. De Saussure's eldest son was earnestly desirous of accompanying him, but it was thought that he was not strong enough for so arduous an enterprise, and he was left by his father to make observations at the Priory corresponding with those intended to be made on the mountain.

The unwieldy party started for the Montagne de la Côte on the first of August, 1787. A tent was carried for Saussure, who desired to spend the first night on the summit of the Montagne de la Côte.

In the month of August as a rule this ridge is free from snow, and the whole party arrived safely at the sleeping place in five or six hours without the slightest difficulty or danger, and passed a comfortable night. Saussure had ridden a mule nearly as far as the foot of the ridge, the rest of the party going on foot. He calls particular attention to the rock known as the Bec à l'Oiseau, and says that he was told that a shepherd had once laid a wager that he would sit upon the point of the beak. He did so, but, losing his balance fell, and was killed on the spot.

Their sleeping place was of course the spot utilised by Paccard and Balmat on the evening previous to their first ascent. They here bade adieu to dry land, and embarked on the great solitudes of snow which stretch continuously to the summit.

Three of the guides having gone on to explore the glacier, one of them—Jean Marie Couttet—according to Saussure, nearly lost his life through a snow bridge breaking and letting him fall into a deep crevasse, but fortunately being roped to the two others he was drawn up without injury. On their return, particulars were eagerly asked for, "as if from spies, as to the movements of an armed enemy." Couttet quietly told his story, which made some of the guides grave. The braver members made light of it, but to the others the matter seemed too serious for jesting.

The following morning they started at half-past six. They had all wished to start earlier, but were delayed by the guides disputing as to the weight each was to carry. They then crossed the glacier in the direction of the rock ridge in the centre of the snow-fields, then and now known as the "Grands Mulets." The glacier they found difficult and dangerous—filled with deep and irregular crevasses which could only be crossed by snow bridges. In some cases where crevasses were large and open they went to the bottom of them, and cut steps in the hard ice to mount the opposite side.

The three leading guides were roped together, but the others were unroped, each stepping exactly into the footholes of the guide in front. All the guides were now

in the highest spirits, talking, laughing, and jocosely defying one another.

Saussure passed the place where Couttet had fallen the previous evening, and was horrorstruck at the danger which in his opinion the guide had incurred, the hole in the snow being six or seven feet wide, and revealing a chasm of unknown depth. They found the passage of the glacier so tortuous and difficult that it took them three hours to go from their sleeping place to the lower rocks of the Grands Mulets ridge, although the distance was not more than a quarter of a league in a direct line. A long halt was here made for breakfast, some of the guides desiring to put off their departure as long as possible. But Saussure was inexorable, and they started again at eleven o'clock, not reaching the highest rocks in the chain until half-past one. They recognised the town of Nyon and the range of the Jura, each sight such as these filling the whole caravan with joy, being good evidence of the progress made. Regaining the snow, they stopped on the brink of a great abyss which seemed to bar their progress. While inspecting this difficulty, an unfortunate accident happened, for Têtu, Saussure's servant, dropped the foot of the barometer which he was carrying, and it shot like an arrow into the crevasse. The Professor was terribly disappointed, for the article in question was useful for several purposes. Some of the guides offered to descend into the crevasse and search for the missing object. Saussure hesitated to subject them to any risk, but one of them took a rope while the others lowered him down, and he soon discovered the article and brought

it up in triumph. Saussure was, however, uneasy on another account, for he knew that his party could be seen through the Chamonix telescopes, that his movements were being watched, and he feared that his family would imagine that one of the party, and not a scientific instrument, had been entombed. However, it seems that this incident was not even noticed from below.

They then reached the last rock of the isolated ridge, where they all dined with good appetites, but there was no water, an inconvenience which was soon remedied, for the guides stuck great pieces of snow on the rocks exposed to the sun, the snow soon melted, and each member of the party had as much water as he wanted. The guides could not for some time be induced to leave, for why should not they sleep where at least moderate comfort was to be found? But Saussure said No! The guides remonstrated, but he insisted, fearing that otherwise the third day's work would be too laborious. He had fully determined to camp out in the middle of the snow, and camp out he would. The guides thought that the cold at night would be frightful in those upper regions, and some of them, notwithstanding Balmat's experiences, really believed they would perish. But Saussure stuck to his guns, and declared that he would go on at any cost with those who would follow him, that there was no real danger in sleeping on the snow, that if they kept together they would be quite warm, and that by digging a hole in the snow and covering it with the tent all risk would be averted. At length reassured, they set out. Passing the first plateau soon after leaving

the rocks, they found the remains of enormous avalanches which had fallen from the Dôme du Goûter. At four o'clock they reached the second of the great snow plateaux, which had to be crossed. In fact they had arrived at the spot now known as the Petit Plateau, some twelve thousand feet above sea level, or as Saussure tells us, "ninety toises higher than the Peak of Ténériffe." Here the tent was pitched for the night, after a comparatively easy day, for they had taken less than ten hours from the Montagne de la Côte, including numerous halts. The modern mountaineer in fine weather and good conditions of snow would make the same journey in half the time! They feared to go higher because of avalanches, the remains of which, as we have seen, had been encountered on their way up; some had fallen since Balmat's last journey on the fifth of July, and these lay around the sleeping place. The great difficulty was to pitch the tent so that they could brave the night cold, which some of the guides imagined would be terrible. They had passed avalanches too, of which traces were on all sides, and were afraid that the weight of so many men in so small a compass, and the heat of their bodies, would melt the snow and entomb them in the middle of the night. At length a place was found which appeared free from all ordinary dangers, and the guides began to dig out a hole wherein to pass the night. But soon the effects of the rarity of the air were felt. They could do little or nothing; one man after working for two or three minutes had to give up, and his place taken by another. One of the guides who had gone to fill a barrel with

some water which they had seen in a crevasse, came back without the water and passed the night in great suffering. The experience was a novel one for most of the party, and Saussure says that, accustomed as he was to mountain air, his fatigue in making observations was extraordinary, that he had a burning thirst and could get no water to quench it, as what they carried with them was frozen, and their little brazier was insufficient to melt snow enough for so large a party. It was a striking sleeping place. In front was Mont Blanc; on the east the great heights of the Midi, the Maudit, and the Tacul —on the west the Dôme du Goûter, snow everywhere of dazzling brightness contrasting strangely with the black sky. No living thing to be seen—no trace of vegetation —the home of cold and silence. "When I thought of Paccard and Balmat being the first to reach these solitudes at the close of day, without assistance, without shelter, without being certain even that men could live there, and yet resolutely pursuing their journey, I was full of admiration at their courage and strength of mind."

The Professor did not altogether like his surroundings. It was agreeable enough, he says, to find oneself at the end of a day at a good sleeping place, where the freshness of the evening only dissipated fatigue; but on these elevated snow-fields, at the end of a laborious day, in an extremely low temperature, affected by the rarity of the air, hardly knowing what to do, the strength and courage born of exercise seemed to vanish.

Saussure's pledges to his guides were amply redeemed.

From fear of the cold, the tent was fixed with scrupulous care, and he suffered so much from heat and the bad air that he had to go outside to breathe! The moon was brilliant in a sky of ebony, the planet Jupiter radiant behind the peaks to the east of Mont Blanc, and the reflected light from the snow-fields was so dazzling that only stars of the first and second magnitude could be seen. At last they tried to sleep, but could not for the noise of a great avalanche rolling over part of their previous route. It was not very cold, however, for at daybreak the thermometer marked only three degrees below freezing point.

The next morning they did not start till late, having to melt snow for their breakfast and their journey. It was drunk as soon as melted, and the men, who took special care of the wine, constantly stole the water which should have been kept in reserve. They then began to climb towards the third and last plateau (the Grand Plateau), on reaching which they turned to the left to gain the rock, now known as the Rochers Rouges, to the east of the summit. A hut is now erected here which can be seen distinctly from Chamonix in clear weather. Saussure calls the Rochers Rouges the left shoulder, or the second staircase of Mont Blanc. There are other rocks cropping out between the Rochers Rouges and the summit, but these appear to have received but little attention. The snow was very steep, 39 degrees in some places, and abutting on precipices, and was so hard that the leaders had to cut steps to ensure a foothold. The ascent of this bit took two hours, "although only 250

toises high." It was the famous "ancien passage" which Balmat had discovered and which, lying to the south of the "Corridor," gives a steep and sometimes very dangerous access from the Grand Plateau to the summit of the Rochers Rouges. Coming to the last rock, they turned to the right and climbed the final ridge, which is inclined at an angle of 28 or 29 degrees and is not dangerous, but the air was so rare that their strength was soon exhausted, and Saussure could not walk more than fifteen or sixteen paces without stopping to take breath. From time to time he almost fainted, and was obliged to sit down, but as soon as regular breathing returned he regained strength, and on beginning to walk again it seemed as if he could rush to the summit. All the guides, whatever pains they took, were similarly affected. Saussure took every possible precaution to avoid fatigue. Two guides used the utmost efforts to ensure his safety and comfort. The inevitable alpenstocks, eight or ten feet long, were held by one guide in front and another behind, while the Professor walked between the two, resting on the barrier from time to time as occasion required. He now knew that success was certain, the weather being magnificent, and the climb before him neither steep nor dangerous. They took a little food, sitting on the rocks, but both bread and meat were frozen.

After a prolonged halt at nine o'clock they resumed their march. Saussure went very slowly, constantly resting on the alpenstocks ; his limbs almost refused to aid him, and he lamented the time that was being lost

while he might have been making observations. The only thing that cheered him was the cool breath of the north wind. About halfway up the last slope they came to the final rocks which protrude through the snow. The last effort was the most fatiguing of all, but at length with infinite difficulty he realised the dream of a lifetime and stood upon the summit of Mont Blanc. He confesses it to have been without the pleasure he had hoped for ; the chief joy was that his anxiety had ceased ; the recollection of his suffering caused a feeling of irritation. At the very moment when his efforts were crowned with success, he admits he was more angry than pleased !

The summit was gained at eleven o'clock.[1] He at once turned and looked down to Chamonix, where he had left his wife, his son, and his two sisters-in-law. He knew that they had watched him, following his steps with the greatest anxiety, and he rejoiced to see the flag flying which they had promised to unfurl the moment they saw him on the summit. He then devoted his mind to those observations and experiments which alone gave any real value to his enterprise. He feared, however, to be unable to do more than a fraction of what he had intended, remembering that even where he had slept every experiment had caused great fatigue, partly because, without thinking, a man held his breath, and as the rarity of the air had to be counterbalanced by more frequent respiration, he was obliged to stop and breathe after he had observed, as if he had been running.

[1] NOTE.—Paccard says 10.50. Also that Saussure started with nineteen guides He evidently included the servant Têtu.

He then turned his attention to the view, and particularly to the peaks which greeted him from the Italian side. He satisfied himself, as many subsequent observers have done, that the Mediterranean could not be seen from the summit, but in the opposite direction he had no doubt that Dijon was visible, and even Langres.

A keen north wind was blowing and the cold was severe, but descending a little towards the south the whole party found the temperature extremely pleasant, and most of the guides slept peacefully in the sunlight, whilst the Professor at last made his observations.

One of the most interesting was on the real colour of the sky. Every one knows that the sky as seen from great elevations appears of a much deeper blue than as seen from below. Saussure had caused pieces of paper to be painted with sixteen different shades of blue, and these papers were left both at Geneva and at Chamonix, and also brought to the summit. At noon on the day of the ascent the colour of the sky at Geneva was of the seventh shade, at Chamonix between the fifth and sixth, and on Mont Blanc between the first and second—or the deepest blue, "du roi."

Saussure made interesting experiments on the boiling point of water, on the temperature of the snow, and on the quickness of the pulse. The pulse of Pierre Balmat gave 98 beats a minute, that of his servant 112, and his own 100; whilst at Chamonix, after rest, the same pulses beat 49, 60, and 72 respectively. All were feverish, and had no desire for wine, spirits, or even food.

He remained on the summit for three hours and a

half, but some of the guides descended earlier to seek a denser air. He reached the Rochers Rouges in three-quarters of an hour from the top. The descent of the "ancien passage" was easy and pleasant, the snow being in excellent order. They passed the Petit Plateau where they had slept, and reaching the first rock of the Grands Mulets chain, which Saussure appropriately christened "Le Rocher de l'heureux retour," determined to spend the third night there. Here they had a cheerful supper, and Saussure slept well on a little mattress that formed part of his baggage. It was then, for the first time, that he felt the rapture of having accomplished the task which he had set himself twenty-seven long years ago, a task which he had given up and resumed, and which had been a source of constant trouble and anxiety to his family. His design had become indeed a madness; he could never look upon Mont Blanc without grief and pain, and when at last the summit was gained his satisfaction was incomplete. It was still less when he turned to descend, for he thought only of the unaccomplished. But in the silence of the night, resting at his happy rocks, his mind turned to the observations which he had made, to the mighty panorama he had seen from the summit, and he felt for the first time how true and unalloyed was his satisfaction.

On the fourth of August, the fourth day of the journey, they started at six in the morning and threaded their way through the seracs and crevasses of the glaciers of Bossons and Taconnay; so many changes had taken place, even in the short space of forty-eight hours, that

they could not recognise the route by which they had ascended, and were often obliged to retrace their steps. A great ice-fall took place on the glacier, which filled them with consternation, but at half-past nine they were again on the solid ground of the Montagne de la Côte, and all difficulty and danger was at an end. In about three hours more they regained the Priory, every member of the party safe and sound.

The pertinacious M. Bourrit was anxious to have shared in this expedition, but Saussure insisted upon going alone. The day before he started he had made a pledge to Bourrit that he would leave his tent and eight of his guides on the plateau, but the guides were tired and declined. Bourrit had gone to meet the descending party. He does not tell us where the meeting took place, but he records that he was obliged to return with Saussure after "fifteen leagues of useless walking"—an absurd exaggeration—but he determined to start again on the following day. He made arrangements accordingly and reached the summit of the Montagne de la Côte, but the weather changed and again he failed. He, however, succeeded in crossing the Col du Géant into Italy, reserving Mont Blanc for the following year.

The Professor and his party had a touching reception on their return. The various guides were embraced by their families and friends, who assembled in crowds to congratulate them on their safe arrival. Madame de Saussure, her son, and her sisters, were relieved at length from their long and painful anxiety, and many of the Professor's friends came expressly from Geneva to share

in his triumph. The whole village was *en fête*. The victory was a memorable one and was well deserved. Saussure returned to his home at Genthod, and recorded that he could now look on Mont Blanc with true delight, without experiencing the trouble and anxiety which the sight of the mountain had hitherto given him.

In reflecting upon this celebrated ascent in the light of modern knowledge, the chief surprise is that so large a party ever succeeded in reaching the summit. No chain is stronger than its weakest link, and in this case, though many suffered, no individual succumbed. But none of the four days during which the expedition lasted made undue demands upon the staying power of the party. Again, the weather was throughout exquisitely beautiful, as so often happens after a long period of mist and storm. The snow was in excellent order, and the atmosphere was as perfect as could have been desired.

No true mountaineer will ever undervalue this great achievement; not though in these later days men have crossed the mountain over the summit from Italy into France; not though they have climbed it without guides, nor even in rare cases from base to summit and back again in a single day. The real glory must always rest with the Pioneers. If we go more easily than they did, what wonder, for have we not the benefit of their experience? If we see further, what wonder; do we not stand on their shoulders?

So ended this memorable struggle with the hitherto unknown forces of nature. The Peasant, the Doctor, and the Philosopher had alike been successful. The grand-

son of Saussure now occupies the old house at Genthod, where, as his guest, I have handled the coat and the shoes and the alpenstock used by his illustrious relative on his ascent more than a hundred years ago. Jacques Balmat lived until 1834, and died in his seventy-third year from a fall whilst searching for legendary gold among the cliffs of the Fer à Cheval above Sixt. A handsome bronze medallion has been erected to his memory by the French Geographical Society in front of the old church at Chamonix, and two most admirable statues of Saussure and Balmat, the latter with outstretched hand pointing to the summit of Mont Blanc, now stand in the village by the banks of the rushing Arve, as a perpetual record of their common triumph. Poor Michel Gabriel Paccard, the village doctor, lies buried in the ancient churchyard without even a stone to mark the place of his rest.



Statuesiof Saussure and Balmat by Salmson.

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CHAPTER VI

PACCARD VERSUS BALMAT

IT is difficult to ascertain with accuracy the exact amount of credit to be attributed to Dr. Paccard and Jacques Balmat respectively in connection with the first ascent of Mont Blanc. Balmat, as we have seen, took all the credit to himself. It was he who, according to his own story, allowed the Doctor to accompany him. It was he who wanted a witness to his own triumph. It was he who, having first ascended alone, returned to seek the half-frozen and helpless Doctor at the foot of the Calotte, and dragged him by force to the summit. But is the story of Balmat to be relied upon?

It has been shown that the account of the ascent, which has been generally accepted as authoritative, was dictated by Balmat to Alexandre Dumas in 1832, forty-six years after the event took place. In the interval Balmat had become a great man, and the story was not likely to have lost colour by the lapse of time. Dumas tells us that when he arrived at Chamonix at night, after walking eight leagues, he only thought of three things, which he recommended to all who followed the same route: "To take a bath, to get

some supper, and to send an invitation to dinner to M. Balmat who is called Mont Blanc," and whom he further described by a characteristic hyperbole as the "Christopher Columbus of Chamonix." An invitation was duly sent, and on returning from an excursion to the Mer de Glace, Dumas saw an old man of about seventy seated on a bench. He at once came to the conclusion that the stranger was the guest he was expecting, and went up to him holding out his hand. He was right; it was Jacques Balmat, "that intrepid guide who first set foot on the summit of Mont Blanc and who prepared the way for Saussure, courage in this case preceding science." They had a little feast, the novelist's own guide being one of the party. At dessert, Dumas referred to Balmat's exploits, and the old man at once became talkative. He required no pressing, and wished nothing better than to relate the details of his perilous journey. The other guide remained silent, he had probably often heard the story before. Dumas took out his notebook and his pencil, and wrote down the tale already presented to the reader. When he had finished, Dumas asked, "And Doctor Paccard, was he really blind?" "Well, I can only tell you that when he died, at the age of seventy-nine, he could read without spectacles, but I must confess his eyes always remained horribly bloodshot." "From the effects of the ascent?" asked Dumas. "Oh, no!" was the reply; "to tell you the truth, the honest gentleman became somewhat addicted to 'lifting his elbow.' So saying, Balmat finished his third bottle."

It is a great pity that the poor Doctor was not also a member of the party, in which case the details of the story would probably have been varied.

It is clear that Balmat was an intense egotist. His boasts of his famous calf, his grand legs, his stomach like cast-iron, and his ability to go three days without eating, are proof enough of that. Between the desire of the guide to make the most of his recitation, and the novelist of his story, the account is full of inaccuracies. "I had come to the edge of the great crevasse in which three men had died," says Balmat, "and out of which Marie Couttet had been pulled up. Ah! I said, is that you?" Now these three men perished in the Hamel catastrophe which happened in 1820, whilst Balmat's climb was made in 1786. He must have confused his own recollections with the knowledge which he ultimately gained. Again, the shopkeeper who was taken into confidence was told, says Balmat, to look out on the following morning on the Dôme du Goûter side of the mountain. This was absurd, as their intended route was not by way of the Dôme du Goûter but by the Rochers Rouges, not by the western but by the eastern side of the summit. This, however, is a point on which Dumas might have fallen into error. According to Balmat's account, he treated Paccard almost like a child, and speaks slightingly of his personal capacity. But Paccard was then five years older than Balmat, being at the time of the ascent twenty-nine years of age, whilst Balmat was only twenty-four. Paccard was known to be a competent mountaineer, and there is no evidence, save Balmat's

word, to justify the assumption that Paccard was less competent than his companion. Balmat was again wrong about the Doctor's age. According to the Chamonix registers he was born on the first of February, 1757, and died on the twenty-first of March, 1827, so that he was only seventy years of age, and not seventy-nine.

What is needed is to find out the story as told by Paccard, and to compare it with that dictated by Balmat to Dumas. That Paccard's story was written and printed is beyond all doubt, but, unfortunately, it has been irretrievably lost. Probably it was printed for private circulation and not for sale. The most careful search has been made at Geneva and Lausanne, at Chamonix, Bonneville and Annecy, but without success. It is not in the possession of any member of the family of Saussure, it cannot be heard of in Oxford or Cambridge, in London, Paris or Turin. Saussure writing in 1787, says, "The success of the enterprise is known to the public by the accounts which have been given by Doctor Paccard and M. Bourrit." And M. Leschevin, in 1812, gives the exact title of Paccard's publication, "Premier voyage fait a la cime de la plus haute montagne du continent, 1786, in 8vo." He adds that his portrait was painted by M. Backler d'Albe with this inscription :

> "Scandit inaccessos brumali sidere montes,
> Nil hyemis cœlive memor."[1]

[1] "Voyage à Genève et dans la Vallée de Chamouni," P. X. Leschevin, Genève chez Guers, 1812

It is singular that though prints from this portrait are well known, Paccard's story has disappeared.

The question is whether it is true that Balmat completed his ascent alone, and then returned to where he left the Doctor, and dragged him up afterwards. In the first place the story is highly improbable. The wind on the day of the ascent was extremely cold. It was blowing from the north, otherwise the Doctor's hat could not have "careered towards Courmayeur." Even on the Grand Plateau "the wind became more and more boisterous," and on arriving at the "Petits Mulets," "a more violent gust obliged us to lie down on our stomachs to prevent our following the hat." Clearly it was at the Petits Mulets, or about an hour from the summit, that Balmat, according to his own account, left the Doctor and continued his journey alone, "telling him to be sure not to stand still." "I had hardly gone thirty paces," he adds, "when, on turning round, I saw him actually sitting down on the snow." Now Balmat admits that in continuing the ascent "he had to stop every ten minutes and wheeze like one with consumption. The cold got worse and worse, and to go a quarter of a league took an hour." He then says that after another quarter of an hour he saw the Doctor far off and shouted to him but could get no reply, but that ultimately he forced him to the summit, where they arrived soon after six o'clock, and, "though the sun shone brilliantly, we saw the stars shining in the deep-blue sky." The latter statement was probably a flourish of Dumas. It may be assumed, therefore, that from the time Balmat left his

companion to the time he returned to him, was at least an hour and a quarter, more probably an hour and a half. The cold was excessive, and their hands must have been already frost-bitten. Paccard always stated that he and Balmat did not part company, and arrived on the summit together. It is scarcely credible that the Doctor could have survived an hour and a half's exposure whilst sitting alone on the snow in the bitter cold, still less that after such an interval he could have resumed his journey with success. Even a benevolent critic, on carefully considering Balmat's story, must feel disposed to put the tongue of incredulity into the cheek of derision.

The contemporary evidence is very interesting, but it gives no support to Balmat's assertion. Paccard's own statement in his diary is, "Our journey of the 8th of August, 1786; arrived six hours twenty-three minutes evening; set out six hours fifty-seven minutes; rested thirty-four minutes." He was evidently in good condition enough to make a very careful note upon the summit, and it is known that he observed the barometer.

When Balmat went to Geneva to convey to Saussure his news of the first ascent, one would think that he would have informed the Professor of the exact details, and certainly of the incompetency of the Doctor if such had been really shown. But Saussure says not a word about the double ascent of the Calotte, and evidently was under the belief that the Doctor was the originator of the successful expedition. In his memorable letter to Tairraz he says, "I wish to attempt the same route; not that I flatter myself that I shall be able to reach the summit, for

I have neither the youth nor the agility of the Doctor. Put Jacques Balmat, who accompanied Dr. Paccard, at the head of the expedition and give him a good payment." It is perfectly clear that any account of his companion given by Balmat to Saussure within a week of the ascent is far more trustworthy than that which he gave to Dumas after an interval of forty-six years.

Again, Saussure, in his brochure published in 1787, tells us "that in the previous year two inhabitants of Chamonix, M. Paccard, a Doctor of Medicine, and the guide Jacques Balmat, had first reached the summit." In the library at Geneva are contained copies of several letters written by Charles Bonnet, the uncle of Saussure, to various persons between 1786 and 1792. One of these etters was written to Count Bielke of Stockholm, from Genthod near Geneva; it bears date the eighteenth of August, 1786, and contains this passage: "You know, M. le Comte, that no one has yet reached the summit of Mont Blanc. On the eighth instant a young Doctor of Savoy, accompanied by a single Montagnard, had first the glory of attaining that summit, and of reaching the highest point of our ancient continent. His name is Paccard. The new route which he has discovered is not dangerous, and it is very different from the one which my nephew Saussure had followed last year, and which had brought him to a height of 1,932 toises only. The Doctor thus has reached 2,426 toises above the Mediterranean. My nephew has received a very careful map of the new route, which he showed me a few days ago, and he is preparing to take advantage of it shortly,

in order to follow the steps of the Doctor and to make more precise observations.

M. Bourrit also adds to our information on the subject. He saw Balmat at Geneva when the latter visited Saussure to bring the news of his success. Bourrit wrote to a friend on the twentieth of September, 1786. This letter, which was printed, but which is extremely rare, gives the first published account of the expedition. Bourrit says that "the first news of the ascent was brought to Geneva by MM. les Barons de Gersdorff and de Meyer, who were at Chamonix at the time and witnesses of the enterprise." He describes his meeting with Balmat, "who still carried on his face the honourable marks of his intrepidity."

He goes on to refer at great length to his own previous expeditions, and to Balmat's discovery of the right route to the summit. He says that after the discovery, Balmat was attended by Dr. Paccard, to whom he confided his hopes of success; then he describes the enterprise, how they slept at La Côte, and how on the following day, starting at four in the morning, they slowly but steadily ascended the glacier; how the distance made them despair; how they feared that the day would not be long enough for their purpose; how the Doctor began to lose breath, and how his more hardy companion encouraged him; how they expected to fail; how at length the summit came in sight; how they dreaded that the real summit might be further still; how Balmat advanced alone to make certain, and found that they were only a few steps from it; how he shouted to announce

his triumph ; *how he descended to meet Paccard,* and how, aiding and animating him, final success was achieved. Then adds Bourrit, "Chamonix contemplated them, strangers from below saw them through their glasses ; they had followed them on their march with inquietude, and they rejoiced at the sight of the two little beings upon so lofty a pinnacle of the globe." Now here is a story told personally by Balmat to Bourrit within a week after the ascent occurred. There is not a word in it about the poor Doctor being left by himself for an hour and a half sitting half-frozen in the snow !

Again, in the year 1787 the Rev. William Coxe spent some time at Chamonix. He took great interest in the early attempts to ascend the mountain, and must have known every detail of this expedition. His visit was only one year after the event happened, when the circumstances were fresh in the minds of the villagers. He says that "about six in the afternoon they at length attained the summit of Mont Blanc, and stood triumphantly upon a spot of ground which no one had reached before. They remained on the summit no more than half an hour, the cold being so intense that the provision was frozen in their pockets, and the ink congealed in their inkhorns. Dr. Paccard had just time to observe the state of the barometer." [1]

M. Leschevin not only gives Paccard equal credit with Balmat, but he tells us that the former had determined on the expedition for three years previous to his ascent, that he had three routes in view, but that Balmat induced him

[1] "Travels in Switzerland," William Coxe, London, 1789, vol. ii. p. 16.

to accept that which was ultimately followed. Balmat's portrait was subsequently painted, and as if to turn all doubt into certainty the following statement is set out at the foot of the portrait :

"The eighth of August, 1786, at six in the evening the Doctor Paccard, accompanied by Jacques Balmat, crystal hunter of the Valley of Chamonix, reached the highest summit of Mont Blanc till then inaccessble, after fourteen hours of walking on the ice."

"Balmat ought to have an honest reward," says Bourrit. "Strangers have often promised something handsome to the man who first ascended the mountain, but from what I hear I fear that they have forgotten it ; at present he is without recompense. He has exposed his life or at least his health, and perhaps he is already much altered. His companion has no need of reward, his father is one of the richest men in the valley ; besides, it is not the same with an amateur as with a guide."

Balmat was, in fact, well rewarded. He received not only a considerable sum from M. de Saussure, but a large gift from the King of Sardinia (fifty pistoles of Piedmont), another from the Baron de Gersdorff, and a public subscription was opened in his honour, to which a great number of persons contributed.

The very year of Saussure's expedition Balmat built a house at the village of Les Pèlerins out of the moneys he so received. The house still exists, and now bears this inscription : — "Jacques Balmat a fait bâtir cette maison en 1787, il l'a habitée jusqu'à sa mort en 1834."

It was not long, however, after the ascent before



Jacques Balmat, by Wiebel, from an old lithograph.

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Balmat claimed all the credit for it. An expostulation from an anonymous writer which appeared in the *Journal de Lausanne* on the twenty-fourth of February, 1787, was evidently an answer to some statements contained in the first account written by Bourrit, and above referred to. In this communication it was asserted that Paccard really discovered the true route, and that both arrived together on the summit. Bourrit defended Balmat in the same journal in the month following, but Paccard retorted by producing a certificate signed by Balmat in the presence of witnesses, which amply bore out all Paccard's assertions. The certificate appeared in the *Journal de Lausanne* on the twelfth of May, 1787. It is given in full by Mr. Whymper in his "Guide to Chamonix and Mont Blanc," and need not be repeated. Mr. Whymper, who properly takes for granted the fact that the certificate was signed by Balmat, asks "whether he knew what he was signing." The "old wolf of the mountains" was not very likely to have given praise to Paccard if it had not been due to him. These personal recriminations and the antagonism which gave rise to them, form a blot on a story otherwise honourable to both men. Unfortunately they cannot be ignored, if we would do equal justice to the heroes of the most famous of all the feats of mountaineering.

We must revert once more to the Dumas narrative. There is no doubt that Balmat discovered the first route to the summit, and that this discovery was made after he had been deserted by the other guides under the circumstances already stated. He invented the "ancien

passage," which he climbed alone ; and on reaching the Rochers Rouges, he found that there was no real difficulty between that point and the summit. He was not on good terms with his fellows, and kept his discovery to himself, hoping that he would ultimately profit by it. But it is somewhat remarkable that not one word of the discovery of the "ancien passage" appears in the account which Dumas took down from Balmat's dictation.

Payot's "Guide Itinéraire au Mont Blanc," published in 1869, reproduces the story of Dumas almost verbatim, but contains in addition the following passage :

"At last, when daybreak came, I was frozen, but by dint of friction, and practising the most absurd gymnastics, my limbs became more supple, and I was able to begin exploring once more. I had observed when descending to the Grand Plateau that halfway down there was an incline, steep it is true, but everywhere accessible, and leading straight to the top of the Rochers Rouges. I decided to scale it; but found it so steep and the snow so hard, that I could only hold on by making holes with the iron point of my stock. I succeeded in clinging to it, but I felt extreme weariness and fatigue. It was not an amusing thing to be suspended by one leg, so to speak, with an abyss under one, and to be obliged to cut the ice with the already blunted point of an alpenstock. At length, by force of patience and perseverance, I gained the Rochers Rouges. 'Oh!' said I, 'from this spot to the summit there is nothing more to hinder you ; all is joined together like one piece of ice.' But I was again frozen through and

through, and almost dead with hunger and thirst. It was late, I must descend, but this time with a certainty of succeeding during the first spell of propitious weather."

Why was not this paragraph, intimating so important a discovery, included in the Dumas narrative. And when was it first made public? Precisely the same story is given in "Les Fastes du Mont Blanc" by Stephen d'Arve, published in 1876; and d'Arve states that it was "textually transcribed from the notes left by Balmat to his heirs." No such notes were ever printed, though some were undoubtedly written. Indeed, I have a letter addressed to M. Gabriel Loppé by the well-known guide, Auguste Balmat, and dated from the Eagle's Nest at Sixt on the twenty-eighth of May, 1862, in which he says "that he has found nearly the whole account of the first ascent of Mont Blanc written by the hand of Jacques Balmat."

These accounts are genuine, for there is another biography of Jacques Balmat of great interest and rarity to which attention must be called, and of which I am fortunate enough to have a copy in my possession. Let us see what Michel Carrier has to say.[1]

Michel Carrier was a well-known guide of Chamonix, and the son of that Joseph Carrier who made the attempt in 1783. He was a great friend of Balmat, and he tells us that the account which he afterwards wrote, he obtained from Balmat's own mouth.

According to Carrier, Balmat was one of the most well-

[1] "Notice biographique sur Jacques Balmat dit Mont Blanc, par Michel Carrier.' Genève, Gruaz, 1854.

to-do amongst the agriculturists of the valley. He was gifted with a lively imagination and great courage, and was an intrepid crystal hunter. He tells us that Balmat and Marie Couttet tried to find a way to the summit from the side of the Col du Géant, and also from the side of the Glacier de Miage ; he relates at length the attempt to find out whether the route from the western side was as short as that from Chamonix, and how the other guides deserted Balmat when he went forward to inspect the Bosses route. How he passed the night alone on the Grand Plateau, and how he discovered the "ancien passage," and then he gives the full story of Balmat's discovery, omitted, as we have seen, in the Dumas narrative. So far as I am able to ascertain, Carrier's is the first printed account of the discovery of the "ancien passage."

But Carrier also throws great light upon the doings of Paccard and Balmat. He tells us that Paccard "was fond of all hazardous excursions," and that "he was not a doctor only, but a philosopher and naturalist of no small repute." His description of their ascent is, in the main, perfectly harmonious with that given by Dumas, but he concludes his account as follows :

"They crossed the Petit Plateau without accident, and reached the Grand Plateau towards midday. From the Grand Plateau, verging towards the south, they arrived at the foot of the steep slope of snow where Balmat had been compelled to cut so many steps on his previous expedition. Although the surface of the snow was then softened by the sun, it took them at least two hours to



The Rochers Rouges and the "Ancien Passage."

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scale it, and to arrive at the Rochers Rouges. Up to this time the rarity of the atmosphere and fatigue alone had incommoded them, but when they arrived at this point a very cold and violent wind from the north-east added to their discomfort. It was so strong that it tore away Paccard's hat, although it was firmly fastened with strings. However, hesitation was impossible. *They must go on under penalty of being frozen on the spot.* From this point to the summit, although the slope was not very steep, they panted painfully for breath, which, added to the fatigue and the death-like cold which they endured, and to the violence of the wind, which forcibly retarded their progress, made their position infinitely perilous. In spite of such powerful reasons for discouragement their indomitable energy surmounted everything, and at four o'clock in the afternoon they reached the summit of the Colossus of the Alps."

No evidence could be more weighty than that given by Carrier, and communicated to him, as he says, by Balmat himself. Carrier is wrong in giving four, instead of six, as the hour when the summit was attained, but that is a small matter.

After this evidence the details of the ascent seem to be satisfactory and complete. The story that Balmat left Paccard on the snow and made his final effort alone, and then returned and took his companion to the top, must be abandoned, as a piece of Chamonix "blague," not uncommon in the village even in these days, but invented after the ascent by a man greedy for praise. The position of the Doctor must be rehabilitated. The two men

ascended the mountain for the first time together. No doubt Balmat was the stronger man of the two, probably he led all the way ; no doubt he inspired the Doctor with that animation of which he stood in need ; no doubt he was a few steps in advance on reaching the summit ; but every reasonable man must now admit that both the pioneers were equally entitled to the honour and credit of the undertaking.

All praise must be given to Balmat for his discovery of the true route. He was alone. He was only twenty-four. The exertions he made when deserted by his companions, and his lying out in the open on the Grand Plateau at a time when it was believed that to sleep on the snow was certain death, form one of the finest pieces of mountaineering on record. The first ascent, too, was a brilliant and memorable performance. The mountain was practically unknown, the men were insufficiently equipped and clothed, whatever they had with them was carried on their own backs, they had no ice-axes, spectacles, or veils. As they started at four in the morning, they had fourteen hours of continuous ascent, an immense effort even when judged by modern standards. They set a noble example of courage, tenacity, and perseverance, under adverse circumstances, and the story will be told, not without pride, to our children's children,

"Far on in summers which we shall not see."

Men now gaze with delight on the two beautiful statues of Jacques Balmat and Horace Bénédict de Saussure with which Chamonix is adorned. They peruse with interest



The Medallion of Jacques Balmat at Chamonix.

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the lineaments of the great guide on the medallion which faces the main street of the village. Is it too much to hope that tardy justice may yet be done to the Doctor, and that some similar memorial may keep green the memory of Michel Gabriel Paccard ? [1]

[1] NOTE.—It will be remembered that in Paccard's account of the attempt of the seventh of June, 1786, he makes the mistake of calling Jacques Balmat "Joseph Balmat des Baux," and that "the one from Les Baux lagged a good deal behind." Probably at that time Dr. Paccard knew but little of Balmat. Of course it was Jacques Balmat who joined the other guides, and who lagged behind—to good purpose, as we have seen. Jacques Balmat was always known as of Les Baux, that being the name of the upper part of the village of Les Pèlerins, where he resided.

CHAPTER VII

SUBSEQUENT ASCENTS OF MONT BLANC—SAUSSURE TO ALBERT SMITH

Colonel Mark Beaufoy, 1787

THE fourth success on the mountain was gained by an Englishman, Colonel Mark Beaufoy. He was at Chamonix immediately after the ascent of Saussure, and hastened to follow so good an example. The Colonel was a well-known man. He was an officer in the Coldstream Guards, was a Fellow of the Royal Society, and is described in the first volume of *Blackwood's Magazine* as being a "Philosopher of considerable eminence." He was the author of several books of some scientific interest, and late in life wrote a valuable work on Mexico.

Four days after Saussure's return from his expedition the Colonel arrived at the foot of the great mountain. He had with him a few scientific instruments, but was unable to obtain others which he required, in such a village as Chamonix. He was warned by the guides against the difficulties and dangers of the undertaking, and was told that the season was too late to hazard another attempt.

Saussure had left, but Bourrit, who was still at Chamonix, and who had again, as we have seen, unsuccessfully attempted the climb, added his warnings to those of the guides. Colonel Beaufoy was not easily daunted; he sent round the village to inquire who was willing to assist him, and ten guides responded favourably to his appeal. He engaged all of them, but does not record their names except that of Michel Cachat, "a fellow of great bodily strength and great vigour of mind, who had accompanied Saussure, and who desired to take the lead." It is clear, therefore, that Jacques Balmat was not a member of the party. The Colonel had a Swiss servant with him, and his caravan of twelve persons started on the eighth of August, 1787, with provisions for three days. They carried also a kettle, a chafing dish, a quantity of charcoal, a pair of bellows, a couple of blankets, a long rope, a hatchet, and a ladder.

At seven in the morning the whole village assembled to see them off. The route taken is by no means clearly defined in the account of the expedition published thirty years afterwards by Colonel Beaufoy. The end of the first hour, he says, "brought us to the Glacier des Bossons, at which place the rapid ascent of the mountain first begins." Pursuing "their course along the ridge of rocks which forms the western side of this frozen lake," they arrived in four hours more at the second glacier "called the glacier of La Côte." There is no glacier of that name, but the point attained must undoubtedly have been the summit of the Montagne de la Côte, where previous explorers had passed the first night of the excursion. The

route taken was the ordinary one, and Colonel Beaufoy states, as the fact is, that "the journey so far is neither laborious nor exposed to danger, unless that name should be given to the trifling hazard that arises from the stones and loose pieces of broken rock which the goats in leaping from one projection to another occasionally throw down." Here they rested for a time, and then crossed the glacier, all the party being well roped. They used their ladder to bridge over the crevasses, and with such assistance they made light of their difficulties, "sometimes stopping in the middle of the ladder to look down in safety upon an abyss which baffled the range of vision, and from which the sound of the masses of ice that we repeatedly let fall in no instance ascended to the ear."

Most of the party suffered from illness, some of the guides had disheartening sickness, and the Swiss servant was the most unfortunate of all. In four and a half hours from their halting place, they gained the new hut on the rocks of the Grands Mulets, which Beaufoy says "had been erected the previous year by the order and at the expense of M. de Saussure," so that it took nine hours and a half of actual walking to get from Chamonix to the Grands Mulets, not an unreasonable time for so large a party travelling by way of the Montagne de la Côte. They then prepared for rest. Two of the guides preferred the open air, and throwing themselves down at the entrance of the hut, slept upon the rocks. Beaufoy was anxious to sleep also, but his thoughts were troubled with the apprehension that "although he had now completed the half of the journey," the vapours might collect upon

the summit of the mountain and frustrate all his hopes. At two o'clock the Colonel threw off his blankets and went outside the hut to be greeted by a brilliant star-lit sky, and to find that the temperature was only eight degrees below freezing point. At three the party started, and after using the ladder to good purpose they made great progress, but suffered severely from an intolerable thirst. At seven they breakfasted, having passed the place where de Saussure slept on his second night, namely the Petit Plateau. Beaufoy tells us that their route was across the snow, but that "the chasms which the ice had formed, though less numerous than those which they had passed on the preceding day, embarrassed their ascent." After a difficult climb, during which the hatchet was constantly employed, they reached the Grand Plateau. An almost irresistible desire to sleep came on. Beaufoy's spirits left him, he became quite indifferent, he wished to lie down, he blamed himself for attempting the expedition, and thought of turning back without accomplishing his purpose. Many of the guides seemed to have lost all strength both of mind and body. At last, "with a sort of apathy which scarcely admitted the sense of joy," they reached the summit about half-past ten.

Six of the guides and the Swiss servant fell flat upon their faces and were immediately asleep. Beaufoy envied them their repose, but his anxiety to obtain a good observation for ascertaining the latitude of the mountain conquered his wishes for a similar indulgence. The view was magnificent, the day being absolutely fine and not a single cloud in the sky. The Colonel fixed the latitude

at 45°,49′, 59″ north, made some further interesting observations, and carefully observed the mountains of Lombardy, "one of which (Monte Rosa) appears of an altitude but little inferior to that of Mont Blanc."

He remained two hours upon the summit and was (from some unexplained cause) nearly six hours in regaining his sleeping place. In the morning he suffered terribly from inflamed eyes, and was rebuked by the guides for not having followed their advice and worn a crape mask. At eleven o'clock on the tenth of August the whole party safely regained the village.

Beaufoy read a paper upon this expedition before the Royal Society on the thirteenth of December, 1787.

Dr. Paccard records in his manuscript, that Beaufoy "went as well as a guide, that he slept at the Grand Cabane and arrived at ten a.m. upon the summit, where he remained for two hours and a half, that the sky was dark blue, and that he suffered—like myself—from the want of a veil."

Albert Smith, who gives a brief reference to this expedition, says that "Beaufoy slept at the Côte, as Saussure had done, but starting very early the next morning he reached the summit by two p.m. This, however, was a forced march." Probably he had not access to Beaufoy's narrative, which states explicitly that he took five hours from Chamonix to the first halting place, and then put on his crampons and crossed the glacier, taking four hours and a half more to get to the sleeping place, which must necessarily have been the Grands Mulets. Again, from three to ten o'clock (or ten-thirty) is very good walking

for a party of twelve persons from the Grands Mulets to the summit, and the fact that they arrived at ten or ten-thirty is proved conclusively by Beaufoy's statement, verified as it is by Dr. Paccard.

It would have been impossible for the travellers to have gone from La Côte to the summit of the mountain in so short a time as seven or seven and a half hours, and it is obvious that if Beaufoy had slept at La Côte he would not have "completed the half of the journey."

The chronicles of Mont Blanc are full of mistakes and errors of this kind, but if we waited until everybody was agreed upon all the details of successive expeditions, no history of the mountain could ever be written.[1]

Mr. Woodley, 1788

In the following year the ever active and ever unfortunate Bourrit was again at Chamonix, accompanied by his son. At the same time an English gentleman of the name of Woodley, and a Dutch gentleman of the name of Camper, were also in the village, and they all agreed to try the ascent together. They engaged twenty-two guides, and the leaders were Jean Baptiste Lombard and Jean Michel Cachat, both of whom had accompanied Saussure. The use of the rope was now getting better understood, and the party was amply supplied with this necessary material. They also carried two tents and a long ladder, and provisions for six days. According to Albert Smith

[1] Bourrit, "Description des Cols," 1803, c. 7; "Annals of Philosophy," February 1817; *Blackwood's Magazine*, April, 1817

they "slept as usual the first night on La Côte, and attempted to reach the summit the next day as Colonel Beaufoy had done." As a matter of fact they did nothing of the kind. Bourrit tells us that they did not sleep on La Côte, but four leagues (hours) above,[1] in other words at the Grands Mulets. The guides had discovered that it was waste of time to sleep at La Côte, and may have surmised that if the first night was passed at the Grands Mulets rocks, it might even be possible to ascend the mountain and to return in two days, whereas Saussure had taken four days and Beaufoy three.

The following morning, the fifth of August, they started before daybreak, following the same route as Saussure, not, however, without anxiety, and their fears were increased by the guides insisting on the whole party being roped as the only guarantee against death or disaster. The procession must have looked funereal indeed, as the face of each member of the party was covered with black crape. They did not arrive until about nine at the Petit Plateau, where Saussure passed his second night, so the pace was funereal also. Several of the guides, as might have been anticipated from their number, gave up altogether, and remained stretched upon the snow, and poor Bourrit, according to his own account, occupied himself continuously in cheering on the stronger members of the party and in observing the beauties of nature. Unfortunately a storm broke out, "and the summit had the appearance of a volcano." Bourrit tells us that he continued to advance with courage, although

[1] Bourrit, "Description des Cols.," 1803, c 7.

only three guides remained with him, Jacques des Dames, Jean Baptiste Lombard, and Tournier. The travellers were of course roped in different parties to their respective guides, and Woodley was a long way ahead, followed by Camper, who was also considerably in advance of Bourrit. The cold, says Bourrit, became excessive. The snow blown up by the wind nearly blinded him, the tracks were becoming obliterated, and his son was taken ill. Meanwhile Woodley persisted in defying all obstacles and pushed on. Camper gave up in despair and hastily beat a retreat, "terror imprinted upon his countenance," telling Bourrit that he believed the first detachment had been lost. Bourrit pictures that he was seized with a desire to succour the Englishman and his guides, and actually got as far as the last rocks on the calotte, but the storm continued, his son became worse, and he had no alternative but to return. He tells us that he descended to a spot which the storm had not reached, from which he saw very distinctly those parts of the Mediterranean which had escaped the observation of Saussure. Of course this was pure imagination—the chain of the Apennines and the range of the Maritime Alps prevent any portion of the Gulf of Genoa from being visible from Mont Blanc.

Bourrit hastened down, the thermometer marking thirteen degrees below freezing point. He passed some of the guides still lying on the snow, others had already arrived at the sleeping place. His son had recovered, and he tells us that it was a happy moment when he perceived the Englishman—who had attained the summit —safely descending with his guides.

There is no doubt that Woodley and his guides suffered severely from the effects of the expedition. The whole party spent another night at the Grands Mulets. Woodley's feet were badly frostbitten, and "had to be kept in snow and salt for a fortnight, one of the guides was blind for three weeks, and Cachat suffered a long time from frozen hands."

Bourrit never tried Mont Blanc again. His greatest feat was the first recorded passage by a traveller of the Col du Géant. As a mountaineer he was a failure, but he must have his due; as a mountain explorer and mountain lover he was one of the two persons primarily responsible for the conquest of the mountain, and his journeys in the Pennine Alps and his numerous publications aroused a genuine interest in all persons who loved natural scenery, and particularly the scenery of the High Alps. He visited Chamonix for the last time in 1812, when he was eighty years of age. He then suffered from paralysis, but, always faithful to his first love, spent his last days in a small country-house near Geneva, from the windows of which he had a fine view of the great mountain in which he took so great an interest, but which he was destined never to climb.[1]

M. Doorthesen and M. Forneret, 1802

The summit of the mountain was not reached again until after the expiration of fourteen years. The affairs

[1] Thierry, "Le Mont Blanc," Paris, 1896.

of Europe in the interval were of such a nature that philosophers and tourists had other things to think of than making pilgrimages to the glaciers. But on the temporary restoration of comparative tranquillity many visitors arrived at Chamonix in 1802. Amongst the number were M. Le Baron Doorthesen, a German, and M. Forneret of Lausanne. They had previously gained some mountaineering experience, and thought Mont Blanc would be within their powers. They set out on the tenth of August, accompanied by seven guides, a great improvement in point of numbers as compared with the twenty-two who had accompanied Woodley and his companions. They followed the ordinary route, and slept at Saussure's cabane on the Grands Mulets. The following day they pursued the usual route under the Dôme du Goûter, but about ten o'clock a violent storm arose, accompanied by a raging wind. Notwithstanding these drawbacks, they redoubled their efforts and reached the summit at half-past twelve. Here the wind was so strong that the party had to sit together for fear of being blown away. They had no view, and stated on their return, that on no possible inducement would they again undertake such an enterprise. They saw several great avalanches, but safely regained the hut at five in the evening. They returned from the Grands Mulets by a new route. Finding the glacier extremely difficult they did not go at all to the ridge of La Côte, but keeping to the base of the Aiguille du Midi they descended to Chamonix by the right bank of the Glacier des Bossons, that is by the route now invariably followed

in climbing the mountain from the Chamonix side. They stated that they had suffered severely from low pressures, and one of them told Bourrit that he felt as if his lungs were being violently torn from his body.[1]

Jacques Balmat and other guides, and Maria Paradis, 1809

In the year 1809, Mont Blanc was first ascended by a woman. Some of the guides wished to make the expedition for their own amusement, and on the thirteenth of July, Jacques Balmat, Payot, Victor and Michel Tairraz, Edouard Balmat and Frasseron set out. As they were on the point of starting, they were astonished at being joined by two women, Euphrosine Ducroz and Maria Paradis. The guides would have nothing to say to Madame Ducroz, but Maria was unmarried, and Jacques Balmat, taking her by both hands, asked her if she had really made up her mind. She said yes. Well, he replied, "I am an old wolf of the mountains, and even I will not promise to succeed. All I ask of you is to be courageous." Maria clapped her hands with joy, and they all started together. They reached the Grands Mulets without difficulty, and on the fourteenth of July at daybreak they started again. The party went too fast for Maria, and she whispered to the leader, "Go more slowly, Jacques, my heart fails me—go as if you were tired yourself." Then two guides took her by the arms, and partly by pushing her, and partly by carrying her, they arrived at the

[1] Bourrit, "Description des Cols," 1803, c. 7.

Rochers Rouges. After considerable difficulty the guides succeeded in getting Maria to the summit, but her strength was utterly exhausted. The following day on reaching Chamonix all the women in the village came out to welcome the young adventuress, and to ask for details of the journey; but she replied she had seen so many things that it would take too long to recount them, and that such of them as were very curious upon the subject could make the journey for themselves.

Maria, however, did give details of the expedition to Captain Markham Sherwill on his return from Mont Blanc in 1825, and also to Mademoiselle d'Angeville. She said that she was very ill on the Grand Plateau and lay down upon the snow, that the guides dragged her up, that on reaching the Rochers Rouges she begged them to drop her into a crevasse and go their own way, but they insisted on her continuing to the bitter end, on reaching which she was unable either to speak or to breathe.

She was known for the rest of her life as "Maria de Mont Blanc," and travellers who subsequently made the ascent record how on approaching Chamonix they found a clean cloth spread under a tree near Les Pèlerins and a refection of milk, cream, and biscuits provided for them, and dispensed with the utmost courtesy by the gallant Maria.[1]

Count Matzewski, 1818

The summit was very nearly attained in 1816 by the Count de Lusi, of the Prussian army, who only succeeded,

[1] Dumas, "Impressions de Voyage," Edit. 1885, vol. i.; "Ascension du Clark et Sherwill," French translation, 1827.

however, in reaching the "derniers rochers." Lusi was a Knight of the Iron Cross, and had taken part in the war then recently concluded. He published an account of his adventures in 1816,[1] from which it would appear that he carried a bottle of Rhine wine with him in which to drink the health of Frederick William; no other wine being in his opinion worthy either of the height or of the occasion. The ill-feeling caused by the war, had, as it would seem, not then ceased, for Lusi induced his guides to certify that no Frenchman had ever reached a similar height upon the mountain.

Travellers were now getting more confident, and a bold young Polish gentleman, the Count Matzewski, actually formed the idea of climbing the mountain from a new side. In August, 1818, he determined to climb the "south needle" (the Aiguille du Midi), and he slept at the Tacul on the Mer de Glace for that purpose, accompanied by six guides. Ascending the Vallée Blanche in twelve hours, they reached some rocks in the neighbourhood of the Aiguille du Midi, from which they could see Chamonix, but having made up their minds that it was quite impossible to climb Mont Blanc by this route they returned in due course to the village. Here the Count engaged eleven guides, but his experiences need not be recorded at any length, for his route was identical with that taken by Saussure. He started on the third of August, went by way of the Montagne de la Côte and slept at the Grands Mulets. On

[1] "Voyage sur le Mont Blanc," Le Comte de Lusi, Vienna, 1816.

the following day he reached the summit at half-past twelve. He remained there an hour and a half, the view appearing to him "to be sublime beyond everything he had previously conceived." He returned to the Grands Mulets at six in the evening, and to Chamonix the following day. Here he met the well-known Captain Basil Hall, and then proceeded to Geneva, where he wrote to his friend, Professor Pictet, a short account of the expedition, informing him that "curiosity and the pleasure of doing what is not done every day led him to the mountains, of which he should ever entertain a pleasing recollection, heightened by the advantage they had afforded him of making the Professor's acquaintance."

This account was sent by Pictet to *Blackwood's Magazine*, the young traveller having expressly stipulated that his name should be withheld.[1]

Dr. William Howard and Jeremiah van Rensselaer, 1819

Americans now desired to share in the triumphs of mountaineering. Dr. William Howard and Mr. Jeremiah van Rensselaer had been travelling in Italy and had ascended Etna and Vesuvius. They arrived at Geneva, and at once determined to visit the Vale of Chamonix.

On arrival they made various excursions to the glaciers

[1] *Blackwood's Magazine*, November, 1818

and had frequent opportunities of conversing with old Dr. Paccard and also with Jacques Balmat, then 57 years of age. The weather being favourable, the oracles were unanimous in favour of the expedition, and the travellers retained the services of Marie Couttet and eight other guides. The party started on Sunday, the eleventh of July, at five in the morning, and at ten reached the glacier at the end of the ridge of La Côte. Jacques Balmat accompanied them to this point, but age prevented his going further. At five in the afternoon they reached the Grands Mulets. They constructed a kind of tent with the aid of sheets, and passed an uncomfortable night, the temperature being several degrees below freezing point. Starting again at three in the morning, they reached the Grand Plateau with some difficulty, and in mounting the "ancien passage" it was feared that Howard would be compelled to return. Howard says that "if we attempted to go more than twelve or at most fifteen steps without halting, a horrible oppression as of approaching death seized on us, our limbs became excessively painful and threatened to sink under us." They were relieved by drinking plentifully of vinegar and water, a custom which I have reason to believe has long since ceased. At half-past twelve they were on the summit, where they remained an hour and a half. The weather was fine, but the wind piercingly cold, and they descended, as usual, a few feet on the south side to avoid it.

They then returned, meeting on their way down, one of those men who had succumbed on the Grand Plateau, and who appears to have taken that opportunity of

breaking the thermometer. They reached their sleeping place again at five in the afternoon, and suffered considerably from cold during the night-time. Early on the thirteenth they descended to Chamonix, with burnt faces and eyes so inflamed that they had to return to Geneva in a darkened carriage, having "purchased perhaps too dearly the indulgence of their curiosity."[1]

Captain J. Undrell, R.N., 1819

Captain J. Undrell arrived at Chamonix on the fifth of August, 1819. After paying a visit to the Jardin, from which he had a clear view of Mont Blanc, the weather became unsettled, and he left for Martigny by way of the Tête Noire. When he had proceeded for seven or eight miles, he turned to have a farewell look at the mountain, which to his great surprise he found quite clear. He instantly returned and instructed Josef Marie Couttet to make the necessary preparations for the ascent. He was imperfectly provided with scientific instruments, and records that "old Dr. Paccard supplied me with all he had," but he could not procure good barometers, which he most wanted. In addition to Couttet, he engaged five other guides, all of whom had accompanied Howard and Van Rensselaer a few days before. These guides were Pierre Carrier, Alexis Dévouassoud, Matthieu Balmat, and Eugène and David

[1] "Narrative of a Journey to the Summit of Mont Blanc," William Howard, M.D., Baltimore, 1821; *American Journal of Science and Arts*, November, 1820.

NOTE.—Dr. Paccard records that this party broke his thermometer.

Couttet, relatives of the leading guide. A hardy youth of eighteen also accompanied the party as a volunteer. Starting at five on the morning of the tenth of August, they followed the new route on the right bank of the Glacier des Bossons, and arrived at the Pierre Pointue at twenty minutes past seven. The usual journey by La Côte now fell into disuse, the guides finding that they could reach the Grands Mulets in two hours less time than the old route involved. A ladder was then kept at the base of the Aiguille du Midi, a spot known then, as now, by the name of "Pierre à l'échelle."

Proceeding across the glacier, their shoes fitted with crampons, without which, according to the Captain, it would have been impossible to have kept their footing, they continued through the seracs all roped together and constantly using the axe to cut footholes. The ladder, too, proved useful, and they safely gained the rocks of the Grands Mulets. The space where they lay was on the south-west side of the rock, measuring about twenty feet by six, and had been previously somewhat levelled by the guides, "who had piled loose stones on the part towards the precipice as a protection." It would be interesting to inquire what had become of Saussure's "Grande Cabane"; by this time probably it had been burnt for firewood by previous travellers; it was clearly too much exposed to be any longer useful.

At half-past one on the eleventh of August they set out for the summit, aided by the moonlight, and Captain Undrell tells us "that the silence and solitude of the scene

induced sensations which he might seek in vain for language to depict." It was bitterly cold, and on arriving at the Grand Plateau their provisions were frozen and the water they carried with them was quite solid. The party all suffered more or less, and one of the guides declined to proceed. The snow was deep and in bad condition, but they proceeded gallantly by way of the "ancien passage" to the top of the Rochers Rouges, where they rested for a short time, and watched the ailing guide, who had been left asleep on the Grand Plateau, slowly toiling upwards. At half-past eleven, exactly ten hours after leaving the Grands Mulets, they reached the summit. The weather was exquisite and the air quite clear. Captain Undrell was satisfied that the Apennines interrupted the view of the Mediterranean. He justly stated that the neighbouring Alps had a very singular appearance, and that the height from which they were beheld seemed to rob them of their character as mountains. Monte Rosa, however, towered in front of them with nearly rival grandeur, and Undrell, who writes in a style as modest as it is graphic, says "that nothing can be fancied so beautiful as the ethereal concave arching out into infinity, without any exhalation or impurity of earth to intercept its magnificence." The party remained three hours and a half upon the summit. The gallant Captain then assembled his guides, asked them to join with him in drinking to the prosperity of Old England, and they began to descend. They suffered severely from the cold at the Grands Mulets the second night, but reached Chamonix in safety at noon on the twelfth, the Captain,

having taken no precautions of any kind, suffering greatly from inflamed eyes.[1]

Frederick Clissold, 1822

In 1820 occurred the terrible accident on the "ancien passage" in which three guides belonging to Dr. Hamel's party were killed by an avalanche. No member of the expedition, however, gained the summit, and the accident will be recorded in another portion of this volume.

It is certain that this catastrophe confirmed the guides in the opinion they had long held, that the route between the Grand Plateau and the summit of the Rochers Rouges was, in certain states of the snow, extremely dangerous, and men began to ask themselves if no other route could be found by which the risk of avalanches could be avoided. For a time no further route was discovered, and the death of the three guides cast a gloom over the valley and certainly deterred travellers from attempting the ascent.

In August, 1822, Mr. Frederick Clissold visited Chamonix under the impression "that having frequently ascended Snowdon without guides, he was in some measure prepared for the critical circumstances attending mountain excursions." No doubt a wide experience on the Welsh hills is an excellent preliminary to climbing in the Alps, and Clissold's ascent was in many respects a

[1] "Annals of Philosophy," 1821.

Note.—Dr. Paccard describes John Undrell as a captain in the Royal Navy, of the county of Warwick, and says that he lent him a thermometer, a graduated half-circle, a compass, and a prism.

memorable one. He visited Pictet and the younger Saussure at Geneva, who gave him every encouragement, the latter gentleman favouring him with a sight of the shoes which his celebrated father had worn during his ascent.

Clissold reached Chamonix on the second of August, and, unlike many previous adventurers, determined to get into thorough training before attempting Mont Blanc. He went to the Jardin and back in a remarkably short time, and actually climbed the Brévent from the village in two hours and a half. He well knew how some of his predecessors had suffered, and he took every possible precaution. He had two veils, one black and the other green. He had a preparation of Burgundy pitch made to cover his chest and to defend his lungs from sudden changes of temperature. Dr. Paccard offered him various instruments, the use of which he declined, as, being desirous of removing the groundless apprehensions excited by the last unsuccessful attempt (Dr. Hamel's), he wished to carry nothing which would retard his progress.

Clissold was a bold man as well as a prudent one. He suggested to his leading guide, Marie Couttet, that instead of starting in the morning they should begin their journey at night, and if possible proceed directly to the summit, sleeping on their return at the Grand Plateau, or even upon the top of the mountain, a plan which Dr. Paccard approved. Six guides were engaged, and all except Marie Couttet wanted to sleep as usual at the Grands Mulets, but Clissold was firm, and the guides gave in.

The party started on the night of the eighteenth of August at half-past ten, quite a novel departure, and Clissold felt such strength and spirits that he wished he were starting for Chimborazo and not for Mont Blanc. He insisted on carrying the knapsack of one of the guides, which gave the others confidence in his strength and encouraged them to greater exertions. At half-past three the following morning they reached the base of the Aiguille du Midi, where they rested for half an hour and then took to the glacier, Clissold outstripping his guides. He learnt caution, however, by a fall in a crevasse and by the loss of his alpenstock, and the whole party reached the Grands Mulets together. After another rest they proceeded, and the sun getting hot, Clissold used plenty of cold cream like any modern mountaineer. He suffered little or no fatigue, and Marie Couttet, who was very short of breath, looked at him with astonishment, saying, "Diable vous n'êtes pas fatigué du tout." They cut steps up the "ancien passage" and reached the Rochers Rouges at half-past six, after twenty hours of walking from Chamonix, including halts, but they had wasted two or three hours waiting for tired guides. They determined to sleep on these rocks, but Clissold pushed on with Marie Couttet to the Petits Mulets, from which point the summit could easily have been gained, but Couttet dissuaded him and he returned to the Rochers Rouges. They made a hole between the rocks and the snow, covered the bottom with pieces of wood and themselves with blankets, and went to sleep. The cold was severe, as a bottle of the best Hermitage was frozen.

There was a brilliant sunrise, and at half-past five the whole party were on the summit. The air was perfectly still and the view superb. They remained three hours on the top. In descending, they reached the Grands Mulets at half-past one, and heard the noise of a great avalanche, which they afterwards discovered had fallen down the "ancien passage" in the very line of the path they had traversed. They reached the village at half-past seven in the evening, after an absence of forty-five hours. Notwithstanding that Clissold was provided with two veils, he used neither, and suffered greatly from inflamed eyes; indeed, he asserts that he had used little or no precaution to protect them from the action of the sun, "the scene being too extraordinary to be viewed through the preservative of green crape, or any other medium." This ascent was in some respects magnificent, but "it was not war." If Clissold, who was a good climber, had taken only three first-rate guides with him, he would have accomplished the expedition in a far shorter time and need not have walked all night. It was a *tour de force* to climb up-hill for twenty hours, and a needless risk to sleep in the open at the Rochers Rouges. Again, the actual ascent occupied twenty-two hours, including halts, five or six hours longer than was necessary, but Clissold's scheme obliged him to go from the Grands Mulets to the Rochers Rouges in the day-time, and so to grapple with soft snow; whereas, if he had slept as usual at the Grands Mulets and started at midnight, he might have been on the summit soon after sunrise and had the snow in the best possible condition.

However, he was the first man who had ever stood on Mont Blanc before six in the morning, or who had been up and down within forty-eight hours.[1]

H. H. Jackson, 1823

The ascent of Mr. Jackson was also an interesting one. He came from Geneva to Chamonix with a knapsack, and necessaries, as he tells us, sufficient for any pedestrian exercise less arduous than the ascent of Mont Blanc. He, like Clissold, was a mountaineer pure and simple, had no desire to make any scientific observations, but climbed "from a love of hardy enterprise excusable, as he hoped, in a young man." He wished to obtain the services of the guides who had accompanied his predecessor the previous year, particularly Marie Couttet, who was then the recognised leader of similar expeditions. But all these guides were otherwise engaged, and he secured five others—Alexis and Simon Dévouassoud, Joseph Charlet, Anselm Tronchet, and Jean Pierre Tairraz the younger. He agreed to pay each of these guides sixty francs if they reached the summit. He was evidently a practical man, and his ordinary dress consisting for the most part of a nankeen jacket and trousers, he borrowed more substantial clothing from Charlet, the landlord of the Union Inn. He had evidently thought the matter out with care, and provided

[1] "An Ascent to the Summit of Mont Blanc," by Frederick Clissold, London, 1823.

Note.—Dr. Paccard records that Clissold slept on the upper portion of the Rochers Rouges, and "reached the top on the 18th with six guides."

himself, with the aid of Charlet, with thick cloth trousers, a double-breasted woollen waistcoat with long sleeves, a spencer of strong cloth which served as an overcoat, two pairs of thick woollen stockings, and cloth gaiters. He had heard, too, of inflamed eyes, and prudently added a green veil and dark-green spectacles. On the third of September, 1823, the little party was ready. The weather was not wholly favourable, and he was doubtful whether to undertake the enterprise or not. He met old Jacques Balmat upon the bridge. Balmat had given up the guiding business, but after surveying the heavens advised him to start. He left about eight in the morning, ascended by way of the base of the Aiguille du Midi, and after encountering a storm which wet the whole party to the skin, arrived safely at the Grands Mulets about three o'clock. They carried a sheet with them to form a tent, under which they slept with reasonable tranquillity, though another storm burst over them in the course of the night. They did not start till five the next morning, the weather being fine and the sky clear. Jackson found his green veil and spectacles of the greatest possible service. As he got higher he saw that a tempest was raging on the summit. On the Grand Plateau he had a severe headache, but after a rest the party made straight by the old route to the Rochers Rouges. Some dread was felt at this point, as they actually climbed over the *débris* of a recent avalanche. It appears that the proper use of the rope was still unknown, for while it was fastened round Jackson's body, the guide who preceded him held one

end in his hand and the rear guide held the other. They encountered a piercing wind between the Rochers Rouges and the summit. Charlet was fatigued and sat down. Alexis Dévouassoud stopped to look after him, while Jackson and the three remaining guides pushed on to the summit. The traveller seems to have been prepared for any emergency, though the wind was violent and doubled the labour of the ascent. Exactly at noon they were on the top, Jackson suffering from headache and a slight bleeding at the nose. They had scarcely any view, and the wind was so fierce that they had to cling to one another and exert their utmost strength to keep on their legs. In ten minutes they left, and picked up Alexis Dévouassoud on their road down, Charlet having already descended. At three they reached the Grands Mulets, a very creditable performance both up and down. Jackson had intended to remain at the sleeping place for a second night, but the day being comparatively young, he suggested to the guides that they should follow Clissold's example and all make a push for Chamonix and sleep under more favourable circumstances. The proposition was willingly acceded to, and the party reached the village at about eight o'clock, being the second who had ever accomplished the ascent and the descent within two days. The entire expedition took only about thirty-six hours.[1]

[1] *New Monthly Magazine*, 1827.

NOTE.—Dr. Paccard simply records that Jackson reached the summit with three guides five minutes after noon.

It is interesting to compare the actual number of hours spent in climbing by Clissold and Jackson respectively. Clissold was absent from Chamonix forty-five hours; Jackson only thirty-six. The former was twenty-two hours (including halts) climbing up-hill; the latter only fourteen. In descending, Clissold took eleven hours; Jackson only eight. It was obvious, therefore, that to ensure the minimum of exertion the night bivouac at the Grands Mulets was the right plan.

Dr. Edmund Clark and Captain Markham Sherwill, 1825

There is nothing specially interesting to record in the ascent of Doctor Clark and Captain Sherwill in the year 1825. Both were gentlemen of education and refinement. They were strangers till they met at Chamonix, but both being bent on the same errand they agreed to join in the adventure. They engaged Joseph Marie Couttet, who had already been six times on the summit, and who was the son of that Marie Couttet who had been constantly in Saussure's employ. Six more guides were retained, and the party of nine set out on the twenty-fifth of August at seven o'clock in the morning, the travellers riding on mules as far as the Pierre Pointue. It was usual at that time to strike the Grands Mulets at the foot of the rocks and climb to the top where the resting place was, but later the route was taken by way of the glacier direct to the sleeping place. At five o'clock in the afternoon, or in ten hours from Chamonix,

this spot was tardily gained. Sherwill says "that the beauty of the setting sun and the solemnity of the still evening created in him sensation of terror." A tent was constructed by the usual process of placing poles in a slanting direction against the rock and covering them with a sheet. The party all had a good night except Sherwill, who was severely afflicted with nausea. The next morning they left at five; Clark walking easily, but Sherwill having occasionally to halt. They gained the Grand Plateau after the usual incidents and then struck the "ancien passage." Here the ordinary route was varied. Instead of climbing to the top of the Rochers Rouges, they left these rocks on their left and went straight for the Petits Mulets. Clark and two of the guides led the way, followed by Sherwill, Marie Couttet, and another. At three o'clock they were on the summit, the day being remarkably fine and not a cloud above them. They had thus taken twenty hours in ascending from Chamonix. They at once sunk down on the snow, both travellers being exhausted. They did not remain long upon the summit, as the wind was freshening from the south-west. Clark had brought some small branches of olive from the shores of the Mediterranean, and he placed this emblem of peace in a glass tube, "together with the name of George the Fourth and his deservedly popular Minister, subjoining the names of some of the most remarkable persons of the age," and in descending and reaching the rocks nearest to the summit, he hid this votive offering hermetically sealed with an icy plug, deep down under the

snow, hoping "that it might remain unaltered for many centuries like insects preserved in amber." They slept the second night at the Grands Mulets and regained the village on the following day, receiving the greetings of Maria Paradis as they passed the Pèlerins. Both Clark and Sherwill refer to the Cabane of Saussure on the rocks of the Grands Mulets and constructed in 1787. The roof was gone and it was full of snow, and the walls were not more than two or three feet high. The guides were of opinion that the site of the cabane was more exposed than that now used as a sleeping place.[1]

William Hawes and Charles Fellows, 1827

Two young Englishmen, William Hawes and Charles Fellows, who were active pedestrians, having made the tour of the Rhine and of Switzerland mostly on foot, arrived at Chamonix on the twenty-third of July, 1827. They instantly made arrangements for an ascent, and provided themselves with an enormous quantity of provisions and forty-seven bottles of wine, brandy, syrup

[1] *New Monthly Magazine*, 1826, "A Visit to the Summit of Mont Blanc"; "Ascension de Mont Blanc by Captain Markham Sherwill, translated from the English by Alexander P——r, 1827."

Note.—Dr. Paccard gives a delightful account of this expedition. He says that the party climbed the rocks of the Grands Mulets from their base, having no ladder to cross the crevasses. "My son-in-law, Julien Dévouassoud," he adds, "had a sheepskin to keep his feet warm, and did not suffer from cold. They had snow up to the knees on the Grand Plateau, and suffered from the rarefaction of the air. The Captain was sick. They left there several of their impedimenta, amongst them my electrometer, which they forgot."

Jacques Balmat also wrote a short account of the expedition, which will be found in the Appendix.

and lemonade. They engaged the services of Joseph Marie Couttet and Matthieu Balmat as leaders, and of seven other guides, and started at half-past eight on the morning of the twenty-fourth.

The men of Chamonix had made the usual statements as to the difficulties and perils of the climb, and in order that the guides might be fresh on reaching the glacier, ten porters carrying the provisions were sent in advance to the Pierre à l'échelle. The cottage of Jacques Balmat was visited *en route*, the travellers using mules as far as the Pierre Pointue, and on reaching the Pierre à l'échelle the combined party, numbering twenty-two in all, held a solemn banquet, after which the porters were sent back, and the party, augmented by two volunteers and numbering thirteen persons, proceeded by the usual route to the rocks of the Grands Mulets. They were advised to move not only with caution, but in perfect silence, "as a word spoken might have given vibration to the air, whose agitation would have been sufficient to bring down the masses of ice which were seen, as it were, balancing themselves above our heads."

At half-past four they reached the base of the rocks and, proceeding to the top, they encamped on a little plateau then constructed there, finding and applying to their own use the sheet with which Jackson had constructed his tent in 1823.

They had seven degrees of frost during the night, and the sound of avalanches disturbed their repose. At a quarter to four in the morning of the twenty-fifth they set out, taking with them a very small portion of their

ample stores. Reaching the Grand Plateau at eight, they found that the only route by which the summit had hitherto been reached (the "ancien passage") was totally impassable, avalanches falling continuously from the Rochers Rouges. This was a severe blow. The weather was delightful and the air clear, and yet it was feared that failure was inevitable. Was it possible to find a new way? Four of the guides were sent off to reconnoitre, while the remainder of the party stayed on the Plateau suffering severely from headache, nausea, and exhaustion. Two hours elapsed before their fears were dispelled, when they received a welcome signal to proceed. Leaving the "ancien passage" on their right, they mounted the steep snow-slopes leading to what is now known as the "Corridor," and turning the Rochers Rouges, they were the first persons who ascended the mountain by the Mur de la Côte, and struggling gallantly they reached the summit at half-past two. Hawes was in good spirits, though he found a certain difficulty in breathing. Fellows suffered from an unquenchable thirst; two of the guides failed in reaching the summit, two fell from faintness and "copiously vomited blood." No doubt this assertion was honestly made, but it is clear that some at least of the red wine was brought from the Grands Mulets. However, they pulled themselves together and drank "Health to all below and success to our friends of the Thames Tunnel." The cold was so great that they only waited about half an hour upon the summit, and rapidly descending reached their sleeping place about six. They encountered a severe storm on

the Grand Plateau on their way down, and as much rain had fallen on the Grands Mulets, their blankets as well as their clothes were completely soaked. After passing a wretched night, they started again as soon as possible after daylight and regained the village at nine, meeting Sir David Wilkie, R.A., on their return. The travellers were not much fatigued, but some of the guides had serious inflammation of the eyes. The cost of the excursion was nearly fifty pounds.

This ascent was memorable as being the first occasion when an alternative route to the summit was discovered, which, though longer than by way of the "ancien passage," avoided the risk of avalanches, of which Chamonix guides were now getting greatly afraid. Fellows afterwards became famous in connection with the "Lycian Marbles," and received the honour of knighthood; and he gave me an account of his ascent exactly forty-five years ago, warning me in the most solemn manner never to attempt a similar expedition.[1]

John Auldjo, 1827

John Auldjo, a Scotch gentleman and a member of Trinity College, Cambridge, was travelling in the Alps in the summer of the same year. On passing the now vanished Lac de Chêde on his way to Chamonix, the monarch of the Alps was first seen by him, clothed in

[1] "Ascent to the Summit of Mont Blanc (privately printed), 1828, for Benjamin Hawes, junior." "Ascent to the Summit of Mont Blanc on the 25th of July, 1827, by Charles Fellows (privately printed)."

dazzling splendour. He determined to ascend it, and made training excursions to the Jardin and the Brévent, but he was unable to secure guides to accompany him and returned to Geneva. Here he met Hawes and Fellows on their way home, who gave him valuable information and advice. He returned to the village on the fifth of August to find the rain falling in torrents; but, whatever might be the inconvenience, he insisted on remaining on the spot so as to avail himself of the first favourable change. In due course, Dévouassoud and Couttet, his leading guides, announced to him that the wind had changed, and he made ready to start. He found great difficulty in filling up the number of his guides; only four would volunteer, but at length six agreed to accompany him. These were Joseph Marie Couttet and Julien Dévouassoud, both of whom were members of Dr. Hamel's party, Jean Pierre Tairraz, Jacques Simond, Michel Favret and Jean Marie Couttet; and two villagers, Auguste Couttet and Michel Carrier, obtained permission to join the party. On the morning of the eighth of August everything was ready. Notwithstanding the number of ascents that had already been made, the wives of some of the guides came crying to Auldjo and upbraiding him for tempting those who formed their only support to sacrifice themselves to his curiosity and pleasure. However, matters were arranged, and Auldjo rode a mule to the Pierre Pointue, and the party breakfasted at the Pierre à l'échelle. Here most of the friends of the guides, who as usual at that time had carried the baggage thus far, returned to the village, but

some insisted on going further. About halfway to the Grands Mulets these also returned, and the party of nine shook hands, swore to keep faithful in every emergency, to know no distinction of person, and to be all brothers in the enterprise. They arrived in due time at the base of the Grands Mulets rocks, and proceeding upwards reached the well-known ledge near the summit at four in the afternoon. They lighted a fire and made themselves comfortable, after which Auldjo made a discovery of profound interest. He tells us that he attempted to smoke, but "the rarity of the air rendered the scent of the tobacco so powerful and disagreeable that I was obliged to desist." They constructed a tent with the aid of the usual sheet, and lying huddled up together on their stony couch passed a very satisfactory night. At half-past three in the morning they started, aided by a brilliant moon, and proceeded to the Grand Plateau. Auldjo found the work very fatiguing and the cold exceptionally severe ; the wind was blowing from the north, and the thermometer marked fourteen degrees below freezing point on the Plateau. Following the new route by the Corridor, they soon found the sun, and, getting warm, experienced little difficulty. Whilst climbing the Corridor a great avalanche swept down the "ancien passage," and they would certainly have been killed had they not followed the new and less dangerous way discovered by Hawes and Fellows. At the Derniers Rochers the whole party suffered from headache, thirst, and difficulty of breathing, but the sight of some "female forms" on the Brévent renewed their courage and excited

them to greater exertion. Notwithstanding the sight of the female forms, however, Auldjo was on the point of giving in. In an unhappy moment he discarded his veil and spectacles; he besought the guides to leave him, but they declared that they would carry him to the top if necessary, and that if they could not carry him they would drag him. Ultimately they fastened a rope round his waist, and so hauled him to the summit at exactly eleven o'clock. It was a brilliant and cloudless day. Couttet, who had made seven successful ascents, said he had never enjoyed so extensive a prospect, or seen the mountains so clear from mist or cloud. Auldjo's mind and body alike were so exhausted that he had little joy in his triumph, and throwing himself on the snow with his guides they all fell fast asleep, which neither the burning rays of the sun nor the piercing cold of the snow could either prevent or disturb. After a few minutes' repose a mountain repast was served, but Auldjo tells us that the very taste of food created nausea and disgust, and that one bottle of champagne which was carried to the summit was found amply sufficient to assuage the thirst of nine persons.

Auldjo then carefully inspected the view, and ascertained the extent of country that could be seen from the summit on a perfectly clear day. He afterwards constructed a map of the area so visible, and assures us that it is possible to see as far as Basle on the north, Lyons on the west, Milan on the east, but not quite so far as the Gulf of Genoa on the south. Exactly at noon the signal was given for departure. On arriving

at the Derniers Rochers some fragments of rock were secured, and the guides found the bottle containing the twigs of olive so carefully deposited by Clark and Sherwill two years before. Unfortunately the bottle, supposed to have been hermetically sealed, and the contents of which were "likely to remain unaltered for many centuries," was half filled with water, and the written memoranda were entirely illegible. On arriving at the Grand Plateau, they found the remains of the great avalanche that had fallen down the "ancien passage" in the early morning, and the guides trembled and became pale at the sight of the danger from which they had escaped. One of them turned to Auldjo and said, "My God, had we been obliged to have gone with you by the old route, what a destiny would have awaited us." Auldjo suffered greatly in the descent from heat and faintness. A storm was brewing, and just as they reached the Grands Mulets it broke over them with great violence. After a short halt they proceeded downwards, encountering another storm on their way, and were all drenched to the skin. Auldjo, who had become very weary, walked as Saussure did, between batons held horizontally by two guides, and so arrived at the Pierre Pointue and shortly afterwards at Chamonix, the entire excursion having taken thirty-seven hours. His face was scorched, his lips swollen, and his eyes inflamed. In the following year he published an account of his ascent, far more complete and interesting than any previously given to the public. The first edition is quarto and is full of admirable lithographic illustrations. A second and smaller

edition followed in due course, and a third was published so late as the year 1856, in the preface to which the author remarks that his ascent had procured for him "the gold medal of civil merit from the late King of Prussia, an autograph letter of approval from the ex-King of Bavaria, and the gift of a valuable diamond ring from the King of Sardinia." For many years afterwards he occupied the post of British Consul at Geneva, and I had the pleasure of meeting him at that city in the year 1879, exactly fifty-two years after his ascent was made. He was then a hale old gentleman with a white beard. He died at Geneva on the sixth of May, 1886.[1]

1 "Ascent to the Summit of Mont Blanc on the 8th and 9th of August, 1827"; Longmans, London, 1828.

NOTE.—The final entry of importance in Dr. Paccard's book is as follows: "Mr. Auldjo, English, arrived at the summit on the ninth at 11 a.m., left again at 11.40, and returned to Chamonix at 8 p.m

CHAPTER VIII

SUBSEQUENT ASCENTS OF MONT BLANC—SAUSSURE TO ALBERT SMITH (*continued*)

THE HON. EDWARD BOOTLE WILBRAHAM, 1830

WILBRAHAM was a colonel in the British Army, and whilst visiting the Montanvert in August, 1830, in company with Captain Pringle and the Comte de Hohenthal, the beauty of the weather and the clearness of the sky induced him to attempt the ascent of Mont Blanc. He accordingly consulted Joseph Marie Couttet, who had then made the ascent eight times. Couttet, in accordance with the Chamonix custom, endeavoured to dissuade him, bluntly told him he had better not make the attempt, and would not even promise to assist him. Ultimately he relented, and engaged six guides, all of whom Wilbraham discarded on the advice of his landlord. Some of the guides afterwards selected failed him at the last moment, Couttet having informed him that he must not rely on married men.

Those who finally accompanied him were Joseph Marie

Couttet the leader, Alexis Dévouassoud, Auguste and Pierre Couttet, Michel Favret, and Matthieu Dessailloud, and he set out on the second of August, 1830, and rode on a mule to the Pierre Pointue, the party reaching the Grands Mulets at a quarter past two, a little more than seven hours from the start. Here they found half a bottle of excellent brandy which had been left by Auldjo in 1827, and so charmed was Wilbraham at this discovery, that he ordered his guides to leave certain bottles of wine for his successor, whoever he might be. They constructed a tent with a sheet, and would have slept comfortably, Wilbraham tells us, "had we not been so cramped for room that it was impossible for me to move my legs without kicking the head of the unfortunate man beyond me." At half-past two o'clock on the morning of the third of August they were astir, and Wilbraham provided himself with a cotton nightcap to be worn under a straw hat. The party carried vinegar for drinking purposes, and "eau de Cologne to relieve the acute headache which usually attacks persons at a great height, and from which I suffered considerably during the ascent." In four hours they reached the Grand Plateau, the weather being very favourable and the snow in excellent condition. Here they halted for breakfast, but Wilbraham had no appetite and already felt very much fatigued. As they passed the foot of the "ancien passage" Couttet pointed to the crevasse in which three of Dr. Hamel's guides were engulfed, saying significantly, "Ils sont la." Wilbraham remarked that "they would remain imbedded there till the day of judgment,"

a false assertion as we shall see. He had forgotten, if indeed it was then known, that

> "The glacier's cold and restless mass
> Moves onward day by day."

They proceeded by way of the Corridor, Wilbraham sometimes falling asleep, and although he confesses that he often wished that Mont Blanc never existed, as he had no thought of abandoning the attempt he kept his wishes to himself. At length they reached the summit, on which Wilbraham stepped, like so many of his predecessors, "without the slightest emotion of pleasure." He was thoroughly exhausted, sat down on a knapsack and fell asleep. In a few minutes he recovered, heartily enjoyed the magnificent view, and having quite regained his strength, set out on his return journey "with shouts of joy." Glissading rapidly downwards, they reached the Grands Mulets in three hours and a half, where they halted for a few minutes, Wilbraham suffering no inconvenience except from a raging thirst. On reaching the Pierre Pointue a mule was waiting for him, and he rode into Chamonix, where he was the lion of the place for the two days he remained, "the visitors asking him the most absurd questions imaginable." [1]

Dr. Martin Barry, 1834

Four years later Martin Barry made a successful ascent. He was a Doctor of Medicine of the University

[1] "An Ascent of Mont Blanc in August, 1830, by the Hon. Edward Bootle Wilbraham," *The Keepsake*, 1832.

of Edinburgh, and President of the Royal Medical Society of that city. He was also a Fellow of the Royal Society of Edinburgh, and had considerable scientific attainments. After spending the summer at Heidelberg, he rambled on foot through Switzerland. He ascended the Faulhorn and made a careful examination of the Bernese Alps. On the fifteenth of September, 1834, he crossed the Col de Balme, and had the splendid view of Mont Blanc which so many of us have seen from that enchanting point of view. "An amazing picture," as he records, "which the eye knew not how to scan, chaining the beholder, lost in an astonished gaze. The prodigies of nature piled up there, cast other, even Alpine splendour, far into the shade." The idea of an ascent conceived some hours before, became a settled purpose after the view from the Col de Balme. On reaching the Priory, Barry consulted the guides, who objected that the season was too far advanced, that the days were too short, that much recent snow had fallen, and other arguments with which the men of Chamonix were wont to whet the mountaineering appetite. The moon was at the full, and Barry was in excellent training and determined to start at once

He obtained an outfit from the proprietors of the Hôtel de l'Union, and having retained the services of six guides, he started at half-past eight on the morning of the sixteenth of September.

At noon they were at the Pierre à l'échelle. Here the friends of the guides who had carried up charcoal, blankets, and other mountaineering necessaries, took their departure and returned to the valley.

The lateness of the season and the unusual heat of the summer caused considerable difficulty on the glacier, and the party had to be dragged on to the rocks of the Grands Mulets by Joseph Marie Couttet, who was leading guide. The other guides were Simon Tournier, Michel Balmat, Pierre and Jean Tairraz, and François Despland. Gaining the Grands Mulets rocks was found so laborious that Couttet gave Dr. Barry a certificate that although he had been nine times on the summit of Mont Blanc he had never met with such difficulty in reaching the rocks as on this occasion. At half-past six they gained the usual sleeping place, taking about ten hours from Chamonix, the state of the glacier easily accounting for the unusual length of the journey.

A tent was constructed in the orthodox manner, and the party supped with good appetite and slept well. There was a brilliant moon, and Barry records that the influence upon his mind of that poetic vision of the night, he despaired of ever being able to communicate to others, "although the scene remained a picture on his own memory unalterable by time."

They did not leave the rocks until five o'clock, and naturally found the snow somewhat soft, and were delayed for some time in endeavouring to force a passage over a crevasse on their way to the Grand Plateau. Starting again at ten they turned to the left, and Couttet gave them an account of the Hamel accident near the scene of the disaster, and proceeding by the new route they reached the top of the Mur de la Côte. The enthusiasm of Barry was not equal to what it had been

a few hours before; he was considerably exhausted, and tells us that he had never previously found "the flexors of the thigh and the extensors of the leg so inadequate to the performance of their office." At length exhaustion became extreme, indifference came on, and almost fainting he sank upon the snow; but his work was nearly accomplished, and at a quarter past two he stood upon the summit, having taken nearly twenty hours of actual walking in making the ascent.

After a short rest he soon recovered, made some scientific experiments, and then revelled in the magnificence of the scene. All exhaustion, faintness, and indifference had disappeared, and Barry describes in charming and graceful language the effect which that majestic view produced upon his mind. During the entire day no particle of cloud was visible. At half-past three they turned to descend, and after two or three falls into concealed crevasses, from which Barry was easily rescued, the party regained the Grands Mulets soon after six, spent a second night there, and leaving the rocks at half-past seven the following morning, they took till nearly four in the afternoon to regain the village, where they met old Jacques Balmat, then seventy-three years of age. In the evening Barry gave a supper to his guides. The venerable Jacques Balmat joined the party, and told them of his experiences nearly half a century before.[1]

1 "Ascent to the Summit of Mont Blanc in 1834, by Martin Barry, M.D., F.R.S.E." Blackwood, Edinburgh, 1836.

The Annals of Mont Blanc

Count Henri de Tilly, 1834

A French gentleman, formerly an officer of Dragoons in the service of Charles the Tenth, but who had been exiled from his native country after the revolution of 1830, was the first Frenchman who ascended Mont Blanc. This was Count Henri de Tilly, who was fond of adventure, and who had ascended Mount Etna in the spring of 1834. Arriving at Lausanne in October of that year, but being ignorant alike of glaciers and guides, he had not then determined upon making the ascent, but the thought of doing so was always in his mind, and on reaching Chamonix on the fifth of October he sent for the hardiest guide then to be found in the village, and Michel Dévouassoud soon presented himself. This guide, it may be remembered, accompanied Clark and Sherwill in 1825. The Count and Dévouassoud made an excursion to the Jardin by way of the Couvercle, and Tilly being assured that the man who could climb the Couvercle without losing his head could be guaranteed for Mont Blanc, at once made up his mind. He admits that it was a grave and solemn determination, but he was prepared to look all difficulties steadily in the face. In addition to the leader he took with him François Despland (a name which now seems to exist no longer at Chamonix), David Simond, Julien Dévouassoud, Jean Michel Tairraz, and Matthieu Simond, and the party started at six o'clock in the morning of the eighth of October. There were neither tears nor lamentations, although the lateness of the season was the cause of considerable uneasiness.



The Old Route by the Grands Mulets Rocks.

[*To face page* 150.

Certain porters in charge of the baggage were, as usual, despatched in advance; then came Tilly mounted on a mule, attended by his leading guide, the five remaining guides bringing up the rear. Passing the cottage of Couttet, "the most renowned guide of Chamonix," at the hamlet of Les Pèlerins, Tilly reached the Pierre Pointue, where he parted with his mule, and shortly afterwards the whole party breakfasted at Pierre à l'échelle, which they reached at ten o'clock. A recently fallen avalanche from the Aiguille du Midi caused them some alarm, but one of the guides, taking Tilly by the arm, hurried him from the spot, and they made good progress to the Grands Mulets. On the road the guides assured him that the Aiguille du Midi and the Mont Maudit were alike inaccessible, and that the latter mountain had been so named on that account. The porters left them in the middle of the Glacier des Bossons, so that the party consisted only of seven persons. Tilly was greatly impressed by the magnificence of the scenery, which he compared very favourably with that of Etna. Mont Blanc, he said, elevated the soul whilst Etna debased it; the one was heaven and the other hell. At length they arrived at the foot of the Grands Mulets, and I am able to reproduce from the book afterwards published by Tilly an interesting picture of these well-known rocks, showing how they were ascended at that time to their summit, where the sleeping place had long been established. The party arrived there between four and five in the afternoon, having taken upwards of ten hours in the ascent from Chamonix. The bottle con-

taining the soup had, with several other bottles, been broken in climbing the rocks, to the Count's great disappointment, but notwithstanding this misadventure they dined gaily. Tilly lamented the fate of the unhappy country which he was not permitted to enter, but putting gloomy thoughts aside, he assisted in fixing the tent, and lying down with four of the guides, all covered by one blanket (there being no room for the remaining guides in the tent), he tried in vain to sleep. At six the following morning (the ninth of October) they resumed their march. No snow had fallen for a long time, and they had the benefit of Barry's tracks made nearly a month before. At eleven they reached the Grand Plateau, where a violent wind assailed them, and they suffered from fatigue and cold. Two of the guides wanted to return, but François Despland and David Simond were always in good heart, their courage increased with the difficulties, and the whole party persevered. Tilly suffered from cold feet, but he was neither sleepy nor thirsty, and had a ravenous appetite. Vinegar he freely partook of, but no food would appease his hunger. The wind became extremely violent, but he had no idea of giving up the expedition. Before reaching the Mur de la Côte, Tairraz and Dévouassoud lagged behind, but at half-past three, or in nine and a half hours from the sleeping place, the whole of the party arrived upon the summit. Tilly was not much fatigued, and after thinking of his dear country, addressed himself to the view. He saw the town of Lyons, he admired the beautiful pinnacle of Monte Viso, more than a hundred miles distant; he

thought he recognised Venice, the home of his exile; he was in an ecstasy of delight. The sky was cloudless, but the temperature was fifteen degrees below freezing point so the party hastened to descend and reached the Grands Mulets in less than three hours, the Count's feet, however, being badly frost-bitten. The reason was not far to seek, for Tilly records that his boots were thin and tight, and that he changed them for the heavier shoes of one of his guides. The return journey was one of great suffering. They rested for a time at the Pierre Pointue, where maidens from below brought him an offering of milk, butter, and honey, and he had a great reception on his return to Chamonix. On the eleventh he went to Geneva, the fine weather having broken up, and was treated for gangrene supervening on frost-bite, by eminent Geneva doctors. He had obtained a certificate, under the seal of the Syndic of Chamonix, that he was the first Frenchman who had reached the summit of Mont Blanc notwithstanding the immense difficulties of the journey due to the unusual lateness of the season.[1]

Mr. Henry Martin Atkins, Mr. S. Pidwel, and Mr. Hedrengen, 1837

Mr. H. M. Atkins was a very young English gentleman who in the year 1837 was pursuing his studies at Geneva. He paid a holiday visit to Chamonix in the month of August in that year. Here he met with another English-

[1] "Ascension aux cimes de l'Etna et du Mont Blanc par le Comte Henri de Tilly." Genève, Pelletier, 1835.

man named Pidwel, and a Swedish officer of artillery named Hedrengen, and the three determined to make the ascent together. They engaged Michel Balmat as chief guide, who, when he had accepted the engagement, begged permission to pass the day with his family. Atkins was greatly struck with this fact, which convinced him that he was engaged in a very perilous undertaking. The guides, he tells us, "displayed no eagerness; there was a solemnity in their countenances and in the manner in which they laid their plans; they collected in little groups about the village and consulted in a low voice." A certain Countess K—— who was at Chamonix at the time begged and prayed him not to undertake the expedition. An Irish gentleman, too, showed him great attention, read to him the history of the Count de Tilly who had his feet frozen, offered to make his will, and consoled him by the information that if he were lost and his body discovered after an interval of ten years, it would be easily identified. The guides in addition to Michel Balmat were David Folliguet, David Simond, Eugène Cupelin, David Couttet the elder, David Couttet the younger, Julien Dévouassoud, Matthieu Balmat, Simon Tournier, and Pierre Joseph Simond; and the party, consisting of thirteen persons, started at seven on the morning of the twenty-second of August.

At eleven they reached the Pierre à l'échelle, the three travellers, if the pictures which Atkins subsequently published may be relied upon, wearing tall hats. Michel Balmat took a dog with him, the first which ever attained the summit of the mountain. Atkins had never previously

been upon a glacier, but Pidwel and Hedrengen had both climbed in Norway and were expert mountaineers. They all reached the sleeping place at the Grands Mulets at half-past four. The weather was beautiful, but Atkins was too much excited to sleep, and "thought of home and all that was most dear to him." They were awakened at two o'clock, and about three they started, aided by a full moon. At a quarter before seven they were on the Grand Plateau and partook of frozen fowls, frozen bread, and frozen wine, the thermometer marking three degrees below zero of Fahrenheit. Atkins was well clothed, wearing lambs'-wool stockings, two pairs of cloth trousers, two pairs of gaiters, two waistcoats, a shooting coat, and over all a blue woollen smock-frock. His sufferings commenced at the Mur de la Côte, where his friends passed him. He was supported by Folliguet and the younger Couttet; he was obliged to stop every ten steps to recover his breath; a lethargy came over him, and a burning thirst which a mouthful of vinegar taken every now and then only partly assuaged. At half-past ten, about eight hours after leaving the Grands Mulets, they reached the summit. Atkins descended a little on to the south side to obtain warmth, wrapped himself in a blanket and went fast asleep. Waking up in a few minutes he enjoyed a splendid view, but, like Dr. Paccard, he lost his hat, and tied five handkerchiefs round his head. After remaining on the top a little more than an hour, they descended and arrived at the Grands Mulets at three in the afternoon. Pursuing their way downwards and having taken bread, milk, and honey at the Pierre Pointue, they arrived at Chamonix in

the evening. Hedrengen's eyes were greatly inflamed, Pidwel was horribly blistered, Atkins suffered much from weakness and was laid up for a week unable to use his limbs, but shortly recovered and was able to resume his studies. The Countess K——, whom he met at Plongeon on his return, and who thought he was lost, attended a dinner given in his honour, and proposed his health, wishing that the same success might attend his military career as had attended him in his ascent of Mont Blanc. The excursion cost each of the three travellers twenty pounds.[1]

Mademoiselle Henriette d'Angeville; M. Eisenkramer, and Count Karol de Stoppen, 1838

In the following year Henriette d'Angeville, who was a member of a well-known French family, "planted the flag of feminine Alpinism" upon the summit of Mont Blanc. She belonged to the house of Beaumont, and was connected with Christopher de Beaumont, the friend of Chateaubriand. Her brother was the Count Adolphe d'Angeville, distinguished in the French navy, and a member of the Institute of France.

Mademoiselle d'Angeville was born in 1794, so that she was no longer young when she became a candidate for mountaineering honours. Her early life was embittered by sorrow. Her father suffered imprisonment, and her grandfather was one of the many victims of "La Guillo-

[1] "Ascent to the Summit of Mont Blanc on the 22nd and 23rd of August, 1837." Not published. Calkin and Budd, London, 1838.

tine." After the storm of the great revolution had abated, the family of d'Angeville retired to Bugey in a hilly country, from which Mont Blanc can be seen in clear weather, and Henriette led a simple country life, acquiring a love for natural scenery which lasted as long as she lived. Notwithstanding her poetical temperament she was a keen observer, and she had much personal courage and a high character. The idea of ascending the great mountain got possession of her to so absorbing an extent that it became a raging passion. Her friends in vain expostulated with her on what they called her folly. "Oui," says her biographer, "folie au départ, héroisme au retour : c'est la règle." Like Saussure, she had the true mountaineering spirit. To see the fairy summit, luminous at sunset, and not to be able to reach it was torture to her soul. She visited the chain of Mont Blanc in July and August, and being a prudent woman underwent a thorough training. She ascended the Mont Joli in the valley of St. Gervais, from which a grand western view can be obtained ; she made excursions amongst the great glaciers, and then returned to Geneva to arrange the details of her intended expedition. Eight days of bad weather concealed the mountain from her view, but as soon as it was fine and she again saw its summit from the Lake, her heart beat violently and she was seized with a burning desire to begin her enterprise. She took medical advice as to precautions to be observed. She made her will and started again for Chamonix. She was a woman of spirit, for the innkeeper at Sallanches asking her three times the ordinary tariff, she passed the night in a poor

little carriage, rather than yield to his exorbitant demands. On reaching Chamonix she put Joseph Marie Couttet in charge of the expedition, who engaged eleven other guides and porters whose names need not be given, and laid in a gigantic stock of wine, spirits, and provisions. She was also very particular about her clothing, any description of which is, however, unnecessary, as I am permitted to reproduce a sketch of Mademoiselle d'Angeville taken from her own album "en tenue d'ascension."

At six o'clock on the morning of the third of September the party set out, the excitement in the valley being intense. Mademoiselle d'Angeville used no mule; full of spirit and energy she rather flew than walked, she refused assistance from the guides who, having carefully watched her, said, "Let her alone; she goes as well as we do and fears nothing." At two o'clock the caravan arrived at the Grands Mulets. Soon after reaching this spot two smaller caravans arrived; M. Eisenkramer, proprietor of one of the Chamonix inns, heading the one, and a Polish gentleman, Le Comte Karol de Stoppen, heading the other, and both shared in the success of the expedition. The latter asked leave to visit the enterprising lady in her camp, which was readily accorded, and the various guides gathered together and passed the evening with songs and merriment.

It was a cold night and Mademoiselle d'Angeville could not sleep. She started early the following morning, but suffered greatly from palpitation and an irresistible drowsiness, and had often to lie on the snow to recover



Henriette d'Angeville.

[*To face page* 158.

her faculties. But her will was paramount and rose superior to all bodily fatigue. "If I die before reaching the summit," she said to the guides, "take up my body and leave it there; my family will pay you for fulfilling my last wishes." The guides responded, "Be easy in your mind; living or dead, to the top you shall go." At half-past one she was on the highest point. The cold was severe, but the weather and the view were alike superb. Recovering with great rapidity she intensely enjoyed her success, and, being a good loyalist, quaffed a bumper of lemonade to the health of the Comte de Paris. A carrier pigeon bore the news of her success to the village, an unnecessary procedure, as of course her progress had been watched from below. "Now," said Couttet to her, "you shall go higher than Mont Blanc." "Is there, then, a way leading to the moon?" she replied. "You will see," said Couttet, and he and the other guides lifted her up as high as they were able.

After passing an hour on the summit they descended to the Grands Mulets, but the lady having suffered a good deal on the return journey, wisely resolved to pass a second night there. The next day they continued the descent, an English lady having sent to the Pierre Pointue a mule with a side-saddle for Mademoiselle d'Angeville's use. This considerate offer was gracefully declined, and she walked into Chamonix amidst the enthusiastic acclamations of the inhabitants and visitors.

The following day she was visited at her hotel by a peasant woman, with white hair, who tenderly embraced her. This was Maria Paradis, the only other woman

who, up to that time, had ascended the great mountain.[1] A banquet succeeded, and Mademoiselle d'Angeville left Chamonix amidst great demonstrations of enthusiasm, which were renewed at Geneva and even at Paris. She died on the 13th of January, 1871. She was long remembered in the valley, and was known both as "Regina Alpina" and "La Fiancée du Mont Blanc."[2]

Il Marchese di Sant Angelo, 1840

The first ascent made by an Italian was accomplished by the Marchese di Sant Angelo, who left Chamonix on the twenty-sixth of August, 1840, and arrived on the summit on the morning of the twenty-seventh a little before eleven. He records no particulars, not even the names of his guides, but the fatigue and danger of the ascent were greatly increased in his case by the quantity of fresh snow which had recently fallen upon the mountain. One of his guides had his feet frost-bitten.[3]

Le Chevalier Jacques Carelli de Rocca Castello, 1843

Carelli was a Piedmontese gentleman living at Varallo. He was one of the first to protest against the exaggerations

[1] Note.—Mademoiselle d'Angeville kept up an acquaintance with the Paradis family, as will be seen from a letter addressed to her by Angélique Paradis, a translation of which appears in the Appendix.

[2] "Mademoiselle d'Angeville," Notice biographique "Annuaire du Club Alpin Français," vol. xx., 1893, par Mary Paillon.

[3] "Le Federal," *Journal Genevois*, 4th September, 1840

then so common of the difficulties and dangers of Mont Blanc. He arrived at Chamonix in 1842, and records with a certain cynicism the anxiety of the casual tourist to make the acquaintance of "l'homme du jour," in other words, of the man who at the moment was planning an ascent of the mountain. Such curiosity he thought unmannerly, even when it emanated from "Les belles Ladys." He objected to being made an object either of sympathy or of admiration, and was not anxious to favour the curious with his autograph. He waited sixteen days at the Hôtel de Londres in bad weather, but ultimately set out. He reached the Rochers Rouges, but snow and mist obliged him to descend, after a gallant and protracted struggle.

In the month of August in the following year he tried again, and engaged David Couttet as leader—who had made six ascents—Jean Mugnier, Michel Couttet, Joachim Balmat, and Simon Couttet. Provisions were laid in to suit the inordinate appetites of the Chamonix guides, and the party started soon after six on the morning of the fifteenth.

The weather was not fine and the guides were doubtful, so Carelli put himself at the head of the party and led the way. Soon after two they reached the Grands Mulets and despatched a pigeon with the following note :

"Grands Mulets, 2.20 après midi. La neige est bonne. Tout va bien." "CARELLI."

—but the unfaithful bird flew off to Les Ouches and the

message was never delivered at Chamonix. The weather became worse, and the party suffered from torrents of rain and snow. Simon Couttet encouraged Carelli by constantly exclaiming, "Ah ! mon Dieu, nous sommes tous perdus" ; our traveller, however, was not to be frightened, though he dreaded a second failure. Before four on the morning of the sixteenth a start was made, and the Grand Plateau was reached at eight o'clock. Here they were enveloped in clouds, and a fierce wind began to blow. The guides wanted to return, but Carelli persisted in going on. They mounted by the "ancien passage" as being the shorter route, but they could not see the Rochers Rouges until they actually arrived there. The guides counselled immediate return, but with an emphatic "jamais" Carelli pushed on, saying he would go alone if they declined to follow him, and between eleven and twelve the whole party were on the summit. The storm continued, and as they could not be seen from the village they tried to despatch another pigeon, but the bird was frightened and refused to fly. They remained on the top only five minutes, the storm continuing to rage. Some of the guides lost their heads and began to descend in the direction of Courmayeur, but soon finding their mistake they took the right route, and regaining the Grands Mulets before two, they halted for an hour and arrived at Chamonix at seven in the evening. Carelli of course ought to have turned back from the Grand Plateau ; he ran grave risk on the "ancien passage" and had no view from the summit, but he behaved throughout with great courage and determination. It is doubtful, however,

whether any of his guides except David Couttet deserved the title of "guides effectifs de la Vallée" which they appended to the usual certificate of the ascent.[1]

Mr. Nicholson and the Abbé Caux, 1843

On the thirtieth of August in this year an English barrister, Mr. Nicholson, induced the Abbé of the Priory to accompany him in an ascent. The Abbé Caux had long desired to climb the mountain at the foot of which he had lived and ministered for many years. The names of their guides (with the exception of Venance Payot their leader) are not recorded, but starting on the thirtieth they reached the Grands Mulets in good time, and on the following day they gained the summit, both walking remarkably well. This ascent was memorable from the fact that the Abbé performed evening service on the rocks of the Grands Mulets before the party composed themselves to rest. Nicholson was greatly impressed by this function, which seemed to him to give "the sanction of experience and piety to an enterprise which had often been represented as foolish, if not criminal."

Nicholson and the Abbé reached Chamonix as early as five o'clock on the evening of their ascent, and both, but especially the Abbé, were greeted with enthusiasm on their return to the village.[2]

[1] "Une ascension au Mont Blanc par le Chevalier Jacques Carelli de Rocca Castello. Varallo, chez la Veuve Caligaris, 1843."

[2] "Vacation Rambles," by T. N. Talfourd. London: Moxon, 1845.

The Annals of Mont Blanc

Messrs. Bosworth, Cross, and Blanc, 1843

In this year Mr. Talfourd, afterwards Mr. Justice Thomas Noon Talfourd, whose tragic death on the bench at Stafford will be recollected by the last generation, was staying at Chamonix with his son, and both were anxious to attempt the expedition. Mr. Bosworth was there, bent on a similar enterprise, having already engaged the services of Jean Marie Couttet and other guides. The Talfourds and Mr. Bosworth joined their forces and made all necessary preparations for an ascent. Two young gentlemen asked permission to start in company with the others, each party, however, making its own arrangements. On the third of September the joint parties set out : five travellers, twenty guides, and eight porters, an enormous caravan. Talfourd was rather slow, and at times required considerable assistance from the guides, but the younger men walked well. In due course they all arrived safely at the Grands Mulets, and after enjoying a magnificent sunset they crept into the usual sleeping places, and "were alone with the rocks, the snow, and the stars."

Starting early the following morning they reached the Grand Plateau, but not without difficulty, for the snow was soft. Talfourd experienced great pain and fatigue ; and even Bosworth, who appears to have been the strongest of the party, suffered from nausea and headache. Bosworth had made for the Corridor, but returning, told Talfourd that his son was ill, and the guides thought it better that he should return ; so the Talfourds "ad-

dressed themselves to the inglorious task of descending." Bosworth, Cross, (one of the young gentlemen), and Blanc, (a Savoyard who had followed them) reached the summit without difficulty, and the Talfourds, who had descended to Chamonix, had the melancholy pleasure of hearing the firing of the cannon which announced the successful enterprise of their companions.[1]

MM. Bravais, Martins, and Le Pileur, 1844

This was a purely scientific ascent, and was memorable on many grounds. It was the first occasion on which men of science deliberately made up their minds to sleep on or near the summit of the mountain, and so to ensure ample time and opportunity for making observations. Arriving at Chamonix on the twenty-eighth of July, they secured a convenient tent and laid in provisions for a journey of three days. They engaged Jean Mugnier, of the village of Tour, as chief guide, who is said to have made the first passage of the Col du Tour, between Chamonix and Orsières. They also had the services of Michel Couttet and Gédéon Balmat. They started on the thirtieth, and having much to carry, the caravan actually consisted of forty-three persons. The morning was cloudless, but the wind was south-west, with a falling barometer, and the fact that so large a party had never previously started for the mountain caused them more anxiety than satisfaction. They were troubled a good deal by stones which fell from

[1] "Vacation Rambles," by T. N. Talfourd. London: Moxon, 1845.

the Aiguille du Midi, and by clouds which soon hid the valley of Chamonix from their sight; but pushing upwards they reached the Grands Mulets at half-past three, taking eight hours from the village, a good march for so cumbrous a party. They pitched their tent and had a good night, though all the signs were unfavourable. They did not start till six the next morning, and were joined on the glacier by Marie Couttet; then eighty years of age, who offered to conduct them to the summit by a new route. This route was no other than the ridge of the Bosses du Dromadaire, so long given up as impracticable. The other guides, however, preferred the ordinary way. On reaching the Petit Plateau, Marie Couttet left them, declining their offer of food and wine. Soon after ten the party reached the Grand Plateau, when a great storm burst over them. They had to choose between an immediate descent and an unpleasant encampment. They were resolute men, but not requiring all the porters they asked for volunteers. Two men instantly offered themselves, Jean Cachat and Auguste Simond, both of whom, especially Simond, afterwards attaining great celebrity in the ranks of the Chamonix guides. The tent was pitched on the Grand Plateau, but being unsteady, M. Bravais suggested pouring hot water on the pegs to which the cords were fastened; the snow at once became ice and the tent was perfectly secure. Snow fell, and the storm became more and more violent. The cold was great, but the men were well clothed. Further ascent was, of course, impossible, and after passing a wretched night, they left the bulk of their

instruments in the tent to be used on a happier occasion, and returned to the village.

On the seventh of August they tried again with Mugnier and Michel Couttet and five porters, Cachat and Auguste Simond being among the number. At half-past six in the evening they reached their tent only to encounter another storm, which lasted the whole of the night, and at three the following day they were again obliged to retreat, and descended to Chamonix at nine in the evening. Nothing daunted by two reverses, they waited till the north wind set in, and started for a third attempt at midnight on the twenty-seventh of August. Their perseverance was rewarded, and in twelve hours they were again in their tent, which had bravely withstood all onslaughts of wind and weather. In perfect health and training they began their observations, which lasted continuously till the first of September. The night of the twenty-eighth was glorious, and so late as ten the following morning they set out for the summit.

Mugnier led them by the "ancien passage" — the route of Balmat and Saussure — which, as we have seen, had been practically discontinued since the discovery of the safer way by Hawes and Fellows. A north-west wind assailed them on the Rochers Rouges, but they reached the summit safely about two, M. Bravais alone suffering from *mal de montagne.* Here they remained for five hours making careful observations the whole time. They had desired to remain on the summit till half-past nine in the evening, and to make "fire signals" which might be seen

at Geneva, Lyons, and Dijon; but the guides, except Simond, objected, and the tent was regained in the evening. Suffering little or no inconvenience, they continued their observations till midnight. On the thirtieth of August Le Pileur returned to the village, but Bravais and Martins remained on the Grand Plateau for two days more, continuing their observations and experiments, and descended to Chamonix on the first of September. A more interesting expedition had never been made. Saussure, it is true, had passed seventeen days on the Col du Géant, at a height of about 11,000 feet, but these men had enough determination, after two failures, to spend four nights in a tent, amidst the snows of the Grand Plateau, at a height exceeding 13,000 feet above the level of the sea. The mountain was becoming better and better known, and the difficulties of encamping at high altitudes more clearly appreciated.[1]

Count Fernand de Bouillé, 1846

The Count Fernand de Bouillé, a French officer, arrived at Chamonix in July and took up his quarters at the Hôtel de l'Union, then a new hostelry of considerable pretensions, and conducted by M. Eisenkramer, who had himself ascended the mountain on the same day as Mademoiselle d'Angeville. At eight on the morning of the thirteenth the Count bade adieu to the visitors who crowded round him to wish him success. The porters, carrying as usual the sacks of the guides, marched first,

[1] "Les ascensions célèbres, Zurcher et Margollé." Paris: Hachette, 1891.

seven in number. There were five guides: Gédéon Balmat (the leader), Ambroise Simond, Michel Couttet, and Jean Edouard and Ambroise Dévouassoud, and two volunteers. It is interesting to record that the Count declined to ride a mule as far as the Pierre Pointue, preferring to make the whole journey on foot. Two porters were sent back on reaching the glacier, and the rest of the party continued the journey in good spirits. The Count received the customary advice to be silent for fear of avalanches, and so satisfied was he that this advice was sound, that he relates the story of a certain Englishman who, being sceptical on the point, fired a pistol at a spot where the strictest silence had been enjoined. An avalanche immediately engulfed him and he was seen no more!

After two or three slips on the part of the Count, the Grands Mulets rocks were reached at three in the afternoon. At five o'clock a stranger was seen approaching. He turned out to be Pierre Payot, who had mounted from Chamonix alone, and who asked permission to join the party as a volunteer. Much snow had recently fallen, and in the course of the evening a great avalanche fell from the Dôme on to the Petit Plateau. They started again soon after midnight, aided by a lantern. The snow was so soft that the leader had to be changed every ten minutes, and the party were greatly delayed by crevasses, so much so that they began to despair of success, and Balmat suggested to the Count that if they succeeded they should on their return have a thanksgiving service at the church. The work seems to have

been unusually severe, for both the Count and his guides underwent considerable suffering. Proceeding upwards Couttet wanted to go by the old route, but Balmat, the leading guide, declined, so ascending the Corridor and cutting steps up the Mur de la Côte they reached the summit about nine o'clock. There was much cold and wind, and the snow was blown into their faces and icicles formed upon their beards. Payot and Ambroise Dévouassoud gave up before reaching the top.

As the view could not be seen it was imagined, and the party hastened down, sending off a pigeon on reaching the Grand Plateau, with the news of their success. This pigeon, however, was also faithless, for it fled not to Chamonix but to Sallanches. On this, as on many other recorded occasions, an avalanche fell down the "ancien passage" whilst the party were mounting the Corridor. Resting some minutes at the Grands Mulets, they reached the village at half-past six "horribly fatigued," and on the following day a thanksgiving service was held, as had been arranged, and the message which had been committed to the pigeon was returned by post from Sallanches. The Count records, but incorrectly, that he was the fortieth traveller and the eighth Frenchman who had been on the summit of Mont Blanc.[1]

Mr. J. Woolley and Mr. J. T. Hurt, 1846

On the fifth of August in this year these gentlemen reached the summit, led by the veteran Couttet, who

[1] "Une ascension au Mont Blanc par Le Comte F. de Bouillé." Nantes: 1846.

had made the ascent twelve times. Professor Forbes was then at the Montanvert making his map of the Mer de Glace.[1]

Mr. S. A. Richards and Mr. W. K. Gretton, 1850

Mr. Richards was an Irish gentleman, and a member of Trinity College, Oxford. Mr. Gretton was formerly an officer in the 5th Fusileers. They left Chamonix on the twenty-eighth of August, having previously made their wills. At eleven on the morning of the twenty-ninth they reached the summit, and regained the village in safety between seven and eight in the evening, preceded by the best music Chamonix afforded. The travellers displayed great coolness and courage on the expedition, and on their return were carried to their hotel on the shoulders of enthusiastic Frenchmen.[2]

Mr. J. D. Gardner, 1850

Mr. J. D. Gardner, of Chatteris, went to Chamonix in August, 1850, with no intention of climbing the mountain. The weather had been long unfavourable. There had been no ascent for three years, except one which was made a few days before Gardner's expedition, and the traces of which he found useful. His wife and child had accompanied him to the village, and the dread of the mountain was still so great that Gardner records the pain

[1] *The Times*, August 13, 1846.
[2] *Ibid.*, September 9, 1850.

of parting with them, for an attempt, the issue of which was so uncertain. For two nights before starting he was unable to sleep from anxiety. He secured the services of six guides : Joseph Marie Couttet and Michel Couttet, Auguste Balmat, then becoming famous (the guide and assistant of Professor Forbes), Gédéon Balmat, Matthieu Charlet, and Jean Couttet. In addition he had six or eight porters to carry provisions and firewood in the direction of the Grands Mulets. The party set out on the second of September, at half-past six in the morning, in cloudless weather, and reached the sleeping place in seven hours. They had a glorious night, sleeping in blankets under the usual sheet, which was fastened tent-like against the rocks to keep off the dew. They started the following morning soon after midnight and reached the Grand Plateau in three hours, notwithstanding the softness of the snow, and it is remarkable that even a guide of such experience as Auguste Balmat should have advised the party to walk in silence lest the sound of their voices should produce an avalanche. Gardner was much fatigued in mounting from the Grand Plateau to the Corridor, and once or twice had to sit down. The cold was severe and some of the guides had their feet frostbitten. On gaining the Corridor, however, they met the sun, and Gardner, who had begun to despair, was inspired with new courage. After a long halt they resumed their journey, climbed the Mur de la Côte, "that almost perpendicular ice wall," and, in spite of the biting wind, reached the summit about ten o'clock. They remained there an hour, and there was not a particle of

vapour in the sky. The descent was made without difficulty, and Gardner returned to the village at eight in the evening, the ascent from the sleeping place and the return to Chamonix having taken twenty hours ; the cost of the expedition amounting to nearly forty pounds.[1]

Mr. Erasmus Galton, 1850

On the fourth of September, in the same year, Mr. Erasmus Galton was at Chamonix, and the weather being fine he determined to make the ascent. He secured the services of six guides—Jean, Victor, Joseph, and Basil Tairraz, Alexander Dévouassoud, and Jean Carrier. Another young guide and a German workman were allowed to join the party as volunteers. Starting at ten on the morning of the fifth, with seven porters who carried the provisions and a ladder, they reached the ice at one o'clock and proceeded across the glacier. The porter who was responsible for the ladder slipped and fell, and being a good deal injured he was left behind with another porter to take care of him. This accident involved an hour's delay, and to Mr. Galton's great regret his only thermometer was broken. On nearing the Grands Mulets the porters were sent back, and Mr. Galton and his guides attained the rocks a little before five in the afternoon. After changing their clothes they constructed a tent with the aid of four alpenstocks and some slight canvas, supped, and went to sleep. Mr. Galton was roused at eight to see the sunset, a most

[1] "Ascent and Tour of Mont Blanc by J. D. Gardner." Privately printed. Whittingham, Chiswick, 1851.

sublime spectacle, as he tells us, "the valley being filled with clouds, a perfectly clear sky overhead, therefore on looking down the whole world seemed gone, and in its place a sea of clouds, with the tops of the mountains showing through like small islands, a sight that no writing can explain."

They were astir at eleven o'clock, and after rubbing his face with hot tallow, and stopping his ears with paper Mr. Galton started exactly at midnight. At six he reached the Grand Plateau, where his respiration was affected. The two volunteers were quite exhausted and were obliged to return, and at seven Mr. Galton "fell down on his face till his lungs were inflated." At times he became "almost unconscious and partially blind and stupefied, and tumbled about like a drunken man;" but after lying down for a short time he was able to start again without much difficulty. At half-past nine they were on the summit, where they lay down for a time and soon revived. They remained there only a quarter of an hour, the guides suffering greatly from cold and difficulty of breathing. Gaining the Grands Mulets again at one o'clock, they rested for an hour, and at half-past six arrived safely at Chamonix. The excursion cost over thirty-four pounds and was probably the quickest that had yet been made.[1]

Such are the various successful ascents of the great mountain, from the time of Paccard and Balmat in 1786 to the time of Albert Smith in 1851, of which any really authentic records are to be found. The list is not an

[1] *The Illustrated London News*, Feb. 8th, 1851.

exhaustive one. It is well known that M. Rodatz, of Hamburg, gained the summit in September, 1812; Mr. Alfred Waddington in July, 1836; M. Doulat in August, 1837; M. M. Chenal, Ordinaire, and Jacot in August and September, 1843; and Mr. Archibald Vincent Smith in August, 1847. But either these climbers left no records of their expeditions or, if such records have been left, I have not been fortunate enough to obtain access to them.

Altogether some fifty-two persons—including Jacques Balmat but exclusive of all other guides—persons of various nationalities, of whom about half were Englishmen, were successful during the sixty-four years which extended from 1786 to 1850. These ascents were undertaken in pursuit of scientific objects, or from pure love of adventure. The ascent which I shall now record, followed as it was by a long series of lectures at the Egyptian Hall, made the ascent of Mont Blanc fashionable, and attracted the attention of the English public to the new form of sport to be obtained amongst the high Alps, and to that wide area of mountain beauty so soon destined to be known as the "Play-ground of Europe."

CHAPTER IX

THE ASCENT OF MONT BLANC BY ALBERT SMITH, THE HON. W. E. SACKVILLE WEST, MR. C. G. FLOYD, MR. F. PHILIPS, AND MR. G. N. VANSITTART, 1851

ALBERT SMITH was the son of a country surgeon, and was born on the twenty-fourth of May, 1816. He was therefore thirty-five years old when he made his memorable ascent of the mountain. From his boyhood he had a craze for Mont Blanc. He had read the works of Saussure, Clark, Sherwill, and Auldjo, and was well acquainted with all the details of the Hamel catastrophe in 1820. Some one had given him a little volume called "The Peasants of Chamouni," and with the aid of this very modest narrative combined with the Alpine classics of Saussure and others, and the sensational pictures of Auldjo; but assisted above all by a vivid and powerful imagination, he constructed a panorama of Mont Blanc.

He had never been up a hill higher than that of St. Anne's, near Chertsey, where he resided, but his first audience—who was his little sister—became pale with fright on listening to his recital of mountain horrors.

The Ascent by Albert Smith

Having run away from school, he was placed early in life at the Middlesex Hospital, and afterwards continued his medical studies in Paris. Wherever he was, Mont Blanc seemed always on his mind; indeed few persons have suffered more severely from that apparently incurable disease "snow mountain on the brain."

In the autumn of 1838, when his age was only twenty-two, he was able to gratify the longing of years, and to make the personal acquaintance of the mountain to which he was so much attached. He was then studying in Paris, and as soon as the vacation arrived he made a journey to Chamonix with a fellow student. Their means were limited, and with infinite pains they scraped together twelve pounds each, which was to last them for five weeks, and carrying this sum about them—all in five-franc pieces—they set out on the twenty-first of September. Albert Smith's diary of this journey is modest and interesting, and shows the privations and fatigue which men had to undergo who, with slender resources, visited the happy hunting ground some sixty years ago. Leaving by a cheap diligence and provided with hard-boiled eggs and a litre of vin ordinaire, they reached Melun in the middle of the day; and having inspected the town whilst the other passengers were taking luncheon, they bought "a brick of bread more than two feet long," and congratulated themselves that while the rest of the travellers paid three francs each, the cost of their own meal was only ten sous. Arriving at Sens in the evening the other passengers dined at the hotel for four francs each, whilst Smith and his friend

were sent by the postilion to a cheap cabaret, and had an excellent repast for a mere trifle. At night they crept under the tarpaulin roof of the diligence, stacked the luggage to suit their own convenience, and slept at full length tolerably well. At daybreak on the following morning they found themselves amongst the vineyards, begged some eggs at Tonnerre, and reaching Semur, where the other passengers again dined, Smith and his friend, still practising the most rigid economy, bought a pie at a confectioner's, and replenished their wine bottle. Passing Dijon at two in the night, and sleeping as before under the roof of the diligence, they proceeded to Dôle, where they purchased a bottle of good Burgundy for threepence, and spent the third night in climbing over the Jura. On the morning of the twenty-fourth they began the descent, and looked down upon the blue waters of Lake Leman. They arrived at Geneva in the afternoon, and found that their entire outlay, including the fare of the diligence, was only two pounds, twelve shillings, and sixpence each, about one-fourth of the conventional expenditure. Early on the morning of the twenty-fifth they set out on foot for Chamonix, arriving at Bonneville in time for breakfast. They bought some fruit in the market-place, and such were the peculiarities of the Savoy currency that, having offered a ten-sous piece to the fruiterer, they received six peaches and twelve sous in exchange. With the aid of a lumber-waggon they proceeded to Cluses, and bargaining with the driver of a return char-à-banc they went on to St. Martin, and walked from thence to St. Gervais. Here.

they met a hearty old man, who told them that his name was Victor Tairraz, and that he kept the Hôtel de Londres at Chamonix. They arranged with him for a room at the top of his house at a nominal charge, and for refreshment at a tariff so moderate, as to cause both surprise and envy to the modern mountaineer. On the following day they passed through the village of Servoz, then the main line of route, and arriving at Chamonix about noon, Smith was brought for the first time face to face with the mountain he had loved so long.

"Tempora mutantur nos et mutamur in illis."

In these days men can leave London at eleven in the morning and reach Chamonix on the following afternoon. Albert Smith took seventy-eight successive hours in making the journey only from Paris to Geneva, and a day and a half more to reach Chamonix. The old travellers in search of the mountains must have found the journey a weary one, but youth and good spirits laughed at obstacles, and bore with a placid fortitude all inevitable delay. Dijon we still know, and Dôle is familiar to us, but what Alpine traveller of this generation has ever seen the towns of Melun, Tonnerre, Semur, or Sens! "The old order changeth, yielding place to new." The new may be better in some respects, but the old was not without its compensating charm.

Smith inspected the glaciers and afterwards crossed the great Saint Bernard into Italy. He visited Novara and Milan, and on the conclusion of the Alpine portion of his tour he records: "We were very happy, could

scarcely believe that we had got so far away from home, and pleased to find our money holding out capitally when we examined our belts on retiring to bed."

His first visit to Mont Blanc gave him a profound satisfaction. Every step he took on entering the valley of Chamonix "was like a journey in a fairy land." At sunset he always sought the fields behind the church to watch the rosy light creep up the mountain higher and higher till it left it again cold and clear against the sky. He knew every step of the route to the summit. Of course he had then no idea of climbing it, but the weather being very fine he hoped that some one would attempt the ascent while he was at Chamonix, in which case he would have offered his services as porter. As a matter of fact, on the day of his departure Mademoiselle d'Angeville arrived.

On his return from his tour he commenced practice as a surgeon, but his mind was still full of Mont Blanc.

The "Literary Institute" was in its infancy in those days. One was just founded at Chertsey, and Albert Smith conceived the idea of writing "a grand lecture about the Alps." He looked up the early pictures he had painted when a boy, copied them on a larger scale, and "contriving some simple mechanism—with the aid of a carpenter—to make them roll," he selected the most interesting portions of Auldjo's narrative, and with a few interpolations of his own made a decided hit. He visited Richmond, Brentford, Guildford, Staines, Hammersmith, Southwark and other places, the inhabitants of which were enlightened upon the theory of glaciers

and the dangers of the Grand Plateau. He must have been a bold youth, or he would hardly have ventured to describe the way up a mountain which he had never climbed ; but the early pictures by his own hand formed the germ of the panorama afterwards painted by Beverley, and the boyish lecture ultimately developed into the entertainment at the Egyptian Hall. He soon gave up his profession, for which he felt unsuited, and devoted himself to literature, in which he gradually acquired a reputation in his own line.

He was one of the earliest contributors to *Punch*, he wrote several extravaganzas, and adapted the Christmas Stories of Charles Dickens for performance at the Lyceum Theatre. George Augustus Sala wrote of him that "he was good, brave, and charitable, and that he never said a hasty word that he did not atone for a hundredfold by a kind action." The verdict of Spielman in his "History of Punch" is not so favourable. Albert Smith, he says, "was usually the butt of the jokers." He was greatly disliked by Thackeray, and was the object of the constant ribaldry of Douglas Jerrold. The latter caustic and often ill-natured critic, having observed the initials "A.S." at the foot of one of Smith's magazine articles, is said to have quietly remarked "that the signature conveyed only two-thirds of the truth." [1] There is no doubt that his tastes in art and literature were anything but lofty, and he had a sense of his own importance which almost approached the sublime. He

[1] Henry Vizetelly, "Glances Back through Seventy Years." London: Kegan Paul, 1893.

was known as "Albert the Great" and "Lord Smith," and even Charles Dickens, always gentle and considerate to his fellow craftsmen, had to admit that "we all have our Smiths." But whatever may be said in his disfavour, this at least must be recorded to his credit, that he loved the mountain for its own sake and that his admiration was the growth of years. When he took his annual holiday he would always when possible find his way to Chamonix, where he became a great favourite among the hotel-keepers and the guides. To this day, a handsome suite of rooms on the second floor of the Hôtel de Londres is labelled "Appartements de M. Albert Smith." He was emphatically a showman from his youth, but it is not true that he ascended the mountain for the purpose of making a show of it. His well-known entertainment resulted from the lifelong interest which he had taken in the great summit, of which he never failed to speak or to write both with reverence and affection.

His first appearance as an entertainer was in the "Overland Mail," which was exceedingly popular. It was written by himself, was illustrated by Beverley, and was full of songs and character sketches, the result of a journey he had made to Egypt and Constantinople. The piece had a long run, and at the close of the season, in August, 1851, he again went to his beloved Chamonix, fully determined to climb the mountain, and assuring his friends, who expressed grave doubts as to his success, that "pluck will serve me instead of training."

Times had changed since his first visit to the Valley. Geneva was now only forty-six hours from London.

The Ascent by Albert Smith

The old diligences had disappeared before the iron road. The highway between Geneva and Sallanches had been greatly improved, and four excellent hotels at Chamonix had superseded the little inn kept by Tairraz, and the modest auberge in which Saussure and his family had been entertained. Smith's old ideas of economy still prevailed, for he took with him no more articles of clothing than could be contained in the well-worn knapsack which he had used in 1838. Indeed he records with glee that he travelled from London in the same train by which the Lord Mayor and some members of the Corporation journeyed to Paris to attend the fêtes held in honour of the Great Exhibition, and who, not having their luggage under the seat of the railway carriage, found on their arrival that the whole of it was lost. Smith had come direct from London, and was sadly out of condition, but he sent for Jean Tairraz and consulted with him upon the practicability of an ascent. Tairraz told him that the weather was about to change, that Smith himself was not personally fit for the excursion, but that he would call a meeting of the leading guides the following morning, and acquaint Smith in due course with the result.

Albert Smith was not the only man who had determined to conquer Mont Blanc in the year 1851. Six gentlemen, undergraduates of Christ Church, Oxford, with a tutor, formed a reading party at the Hôtel de l'Ancre at Ouchy on the Lake of Geneva.

On the twenty-fifth of July, Mr. W. E. Sackville West, Mr. Francis Philips, and Mr. C. G. Floyd, three members

of the party, were rowing between Ouchy and Morges. Suddenly they saw towering in the south the snowy summit of Mont Blanc. They were greatly struck, as so many other men have been, at the sight of the great mountain from this faultless point of view. "Why should we not be on the top before another month is over?" said one of them. "Richards of Trinity ascended last year, why should not we?" A compact was at once entered into, and if these three gentlemen had at the time been members of the Alpine Club, they could not have taken more pains to ensure the success of their enterprise. They went into thorough training, steadily resisted the various allurements of the Ouchy "cuisine," and while not neglecting their duties as a reading party, took severe and systematic exercise. On the first of August, whilst Smith was starting on his journey from London to Geneva, Mr. Philips hastened to Villeneuve, and went from thence by diligence to Martigny. Crossing the Tête Noire the next day, he was struck speechless with astonishment at the sight of the Glacier of Argentière, the first he had ever seen. On reaching Chamonix he was introduced to Jean Carrier, told him of his intention, and that his two friends would join him on the following day. Jean Carrier was quite equal to the situation. He inquired the ages of Mr. Philips' two friends, and whether they were strong and able to undergo fatigue. On receiving a satisfactory response, he stated that "he thought the travellers might manage it with four guides each." Mr. Philips at once made an excursion on the Glacier des Bossons, and the

next day visited the Montanvert and the Mer de Glace. On his return he met his friends, Mr. West and Mr. Floyd, and they were informed that "a Mr. Smith of London" wished to accompany them. As they had no acquaintance with Smith they declined the honour, but finding out later that it was "Mr. Albert Smith, the well-known comic author," they introduced themselves, and proposed to make one party, to which he readily assented. The weather broke, and for some days an ascent was impossible, the young Oxford men, however, making daily expeditions, and getting into excellent training. On the evening of the tenth of August the wind changed, rain and clouds disappeared as if by magic, the guides predicted continuous fine weather, and that in two days the ascent might be attempted.

Smith's travelling companion was Mr. William Beverley, to whom he confided his money and his spare clothes, requesting him to take them home with him if their owner failed to return. He was not in good health, and could not sleep from excitement. On the morning of Tuesday, the twelfth of August, everything was ready. The guides and porters had a repast in the garden of the hotel, all were in high spirits, the barometer was rising, and the sky was steadfast blue. Those of us who in modern days have climbed the mountain with a "poulet," and some bread and butter, and one or two bottles of wine carried on our backs in a small knapsack, may well stand appalled when we read of the stupendous provision of food and drink then deemed necessary for a similar expedition.

The following is a complete list of the articles taken up the mountain by Albert Smith and his friends :

60 bottles of Vin Ordinare.
6 „ „ Bordeaux.
10 „ „ St. George.
15 „ „ St. Jean.
3 „ „ Cognac.
1 „ „ syrup of raspberries.
6 „ „ lemonade.
2 „ „ champagne.
20 loaves.
10 small cheeses.
6 packets of chocolate.
6 packets of sugar.
4 „ „ prunes.
4 „ „ raisins.
2 „ „ salt.
4 wax candles.
6 lemons.
4 legs of mutton.
4 shoulders of mutton.
6 pieces of veal.
1 piece of beef.
11 large fowls.
35 small fowls.

Such provision against contingencies necessarily involved the employment of a host of porters, and as each traveller had four guides, the party consisted of twenty persons exclusive of the porters, who made twenty more. Such an enormous caravan had rarely started for the conquest of the mountain. They set out at half-past seven, Smith following the old custom of riding a mule for part of the way, his companions, however, preferring to dispense with such unnecessary assistance. At about ten they reached the Pierre Pointue, and a little later the Pierre à l'échelle, where they rested half an hour. Taking to the glacier they worked their way upwards, and about halfway to the Grands Mulets the porters departed, and at about four in the afternoon the usual sleeping place on the rocks of the Grands Mulets was attained.

They followed the old custom of climbing the rocks from base to summit, and set to work to clear away the snow from their stony lair. They found the heat not

only sultry but even distressing, and selecting what they deemed necessary from their multifarious stores, they dined with an excellent appetite. The banquet had hardly commenced when they were joined by an Irish gentleman with one guide, who had made use of the track, and later by Mr. Vansittart, who, according to Smith, "arrived with his guide." They made no attempt at the construction of a tent, and Smith, using as a pillow the old knapsack "which had served him on the Mediterranean and the Nile," found his couch sufficiently comfortable. They had a glorious evening, and Smith was spell-bound at the wondrous beauty of the scene; the starry heaven was their only roofing, and one by one they fell asleep. They were wise enough to start early on the morning of the thirteenth. Leaving by lantern light at about midnight, they at once took to the snow, the Irish gentleman, evidently not a Nationalist, shouting "God save the Queen," and Mr. Vansittart getting ready for departure. In three hours and a half, the air being sharp and cold, they arrived at the Grand Plateau, having been delayed a little by a large crevasse, round which, however, Auguste Dévouassoud found a practicable way. Here they halted, notwithstanding the intense cold, and were joined by the other parties, the whole forming a huge caravan. Proceeding upwards they looked down into the crevasse into which an avalanche had swept the guides of Dr. Hamel, and Tairraz whispered to Smith, "C'est ici, monsieur, que mon frère Auguste est péri en 1820 avec Balmat et Carrier; les pauvres corps sont encore la bas."

The route was of course perfectly easy, and it is difficult to comprehend Smith's assertion that "Every step we took was gained from the chance of a horrible death." Working up the Corridor they made for the Rochers Rouges. The Irish gentleman who had been forcing the pace gave in, and was seen "lying on the snow, vomiting frightfully with considerable hæmorrhage from the nose." He returned to the Grands Mulets, where he was found on the descent by the other members of the party. The sun rose, but the north-east wind was bitterly cold, and Smith, who was chilled and dispirited, was nearly at the end of his resources. At the foot of the Mur de la Côte he sat down on the snow, told his guides he would go no further, and that they might leave him there if they pleased. The guides were accustomed to these ebullitions of temper at that elevation; they induced the jaded traveller to get his wandering wits in order, and the party plodded steadily on. The angle of the Côte, according to Smith, was sixty degrees. It is really forty-five. An hour was occupied in getting to the top of the Mur, when Smith could hardly combat an irrepressible desire to sleep, but he was dragged on; his senses were not under control, and he reeled and staggered like a drunken man. His physical condition was the only excuse for his gross exaggeration in describing this well-known ice-slope.

"It is an all but perpendicular iceberg. You begin to ascend it obliquely; there is nothing below but a chasm in the ice, more frightful than anything yet passed. Should the foot slip or the baton give way there is no

chance for life. You would glide like lightning from one frozen crag to another, and finally be dashed to pieces hundreds and hundreds of feet below, in the horrible depths of the glacier."

As a matter of fact the Mur de la Côte, though one of the steepest bits of the journey, is perfectly safe, and the traveller, if he fell upon it, would be landed on soft snow at the bottom, the only drawback being that the climb so far must be made over again.

Smith was wholly out of training and naturally suffered from such unusual exertion, and the absurd terms in which he describes the situation may therefore be excused. He says, "Placed 14,000 feet above the level of the sea," on a spot "terminating in an icy abyss so deep that the bottom is lost in obscurity, exposed, in a highly rarefied atmosphere, to a wind cold and violent beyond all conception, assailed with muscular powers already taxed far beyond their strength, and nerves shaken by constantly increasing excitement and want of rest, with bloodshot eyes and a raging thirst, and a pulse leaping rather than beating; with all this, it may be imagined that the frightful Mur de la Côte calls for more than ordinary determination to mount it." But the guides kept on dragging at the rope, steps were cut up the Calotte, Smith—sometimes falling on his hands and knees—was absolutely exhausted, but the tug of the rope was inexorable, and almost at his last gasp, he found that the ardent wish of years was gratified and that he was on the summit of Mont Blanc. He fell on the snow and was asleep in an instant, but after a few minutes' rest

he recovered, and the day being cloudless he was able to get some satisfaction from the great spectacle which was unfolded to his view.

The journey from the sleeping place occupied only nine hours, by no means bad walking for so large a party. Leaving the summit at half-past nine, they regained the Grands Mulets between one and two. The last scrap of food and the last bottle of wine were duly consumed, and hurrying downwards they organised an imposing procession at the village of Pèlerins, and marched into Chamonix amidst a roar of Alpine artillery and the acclamations of the inhabitants.

Mr. Philips states that the whole party began the climb with the feeling that the fatigue and danger were much exaggerated. Smith intended to "expose the whole affair as an imposition," fancying—not indeed without cause—that the guides were leagued together to overestimate the hazard of the journey. The whole party were more than satisfied at the amount of real strain which the ascent imposed on the individual. Mr. Floyd, as well as Albert Smith, suffered from nausea and headache. Mr. Vansittart, who followed with three guides, fell from exhaustion several times and his thirst was insatiable. Mr. Philips, like Albert Smith, slept soundly on the summit, and all the members of the party returned with their faces much swollen and blistered.

Smith died on the twenty-third of May, 1860. Mr. West, Mr. Floyd, and Mr. Philips still retain delightful memories of their ascent made nearly half a century ago, and the tutor of the Ouchy reading party

was Mr. (now Dr.) Kitchin, the present Dean of Durham.[1]

Albert Smith wrote an account of his ascent to the *Times* newspaper, which appeared in that journal on the twentieth of August, 1851, but he was not courteous enough to give the names of his companions. Much public interest was excited, and a controversy arose as to whether the end justified the risk. Letters on both sides appeared in the *Daily News*, to which journal both Mr. Floyd and Mr. Vansittart sent communications. The late Sir Robert Peel was at Chamonix at the time, and celebrated the occasion by asking all the guides who were not on the mountain to a supper in honour of the event. Mountaineering was then in its infancy. The critics were for the most part unfriendly. Such expeditions were then regarded with ridicule or even with contempt. The *Daily News* summed up the situation as follows: "Balloon ascents and ascents of Mont Blanc are not things to be condemned in the abstract. Treasures of pictorial thought, which men like Saussure and Forbes have brought back with them from their visits to the summit of the Monarch of Mountains, cannot be overestimated. But the aeronauts who peril their lives for the purpose of earning a few shillings as showmen, or to gratify an idle vanity, belong to a very different

[1] "The Story of Mont Blanc," by Albert Smith; London, Bogue, 1853. "Mont Blanc," by Albert Smith, with a memoir of the author by Edmund Yates; London, Ward and Lock, 1860. "A Reading Party in Switzerland," by Francis Philips, privately printed; Manchester, 1851. Letter by C. G. Floyd to *Daily News*, August 27, 1851. Letter by G. N. Vansittart to *Daily News*, August 30, 1851. "An Ascent of Mont Blanc," *Fraser's Magazine*, July, 1855, by C. G. Floyd.

category from the adventurers we have just alluded to. Our aeronauts only risk their own necks, of the value of which they probably form a very accurate estimate when they peril them so lightly, but the climbers of Mont Blanc expose to the hazard of their lives the brave and worthy mountain guides, and the families of these gallant fellows to the loss of their natural supporters. Saussure's observations and his reflections on Mont Blanc live in his poetical philosophy; those of Mr. Albert Smith will be appropriately recorded in a tissue of indifferent puns and stale fast witticisms with an incessant straining after smartness. The aimless scramble of the four pedestrians to the top of Mont Blanc, with the accompaniment of Sir Robert Peel's orgies at the bottom, will not go far to redeem the somewhat equivocal reputation of the herd of English tourists in Switzerland, for a mindless and rather vulgar redundance of mere animal spirits."

Mr. Vansittart at once criticised his critic. He was a great traveller and an accomplished man. Why ridicule, he asked mere amateur aeronauts or climbers of Mont Blanc? "Having walked under the sea in a diving apparatus at a depth of more than a hundred feet, having descended into the bowels of the earth both in the iron mines of Dannemora in Sweden and the salt mines in Poland, having made balloon ascents and climbed many high mountains, I can safely assert that there is a pleasure in such enterprises altogether unknown to those who have not experienced them."

Notwithstanding many catastrophes, it is the fact that amongst the mountains no man need really risk his own

life or that of his guides, if he carefully adopts those rules of prudence and precaution which experience has found to be essential. Let every man ride his own hobby horse, but not necessarily expect anybody else to get up behind.

Criticism is good for all of us, but it is really valuable in proportion to the knowledge and ability and insight of the critic. The time was rapidly approaching when some of the finest intellects of the day began to find out that the best alterative for mental labour was mountaineering, and that no solace or rest or recreation was comparable to that which can be obtained by a practical knowledge of the High Alps.

Albert Smith soon turned his excursion to good account. He was not the first, however, who gave a public exhibition of the mountain. One Robert Burford made drawings of the chain from the Flégère in 1835, and constructed a panorama of Mont Blanc, the valley of Chamonix and the surrounding mountains, which was long exhibited in Leicester Square. Visitors received a printed description of the panorama written in a style that is rather turgid than impressive, and which contained the following passage :—

"To present a clear and intelligible image of a scene so fearfully grand and imposing by a verbal description is impossible, the most fertile imagination aided by the pen of a Byron, or the matchless pencil of a Claude in a painting of moderate size, must alike fail to convey an adequate impression of the reality, for nature is here almost too magnificent, and the whole is on a scale of

such inconceivable vastness that it sets at defiance any attempt to depict it with ordinary means ; the panorama alone, and that to an extent considerably beyond its usual limits, can hope to approach anything like a fair delineation of this sublime scene, and even that, vast as it is, must fall far short of presenting it in all its glorious and ever varying beauty."

But Albert Smith was a born entertainer, and had already felt the pulse of the public in his "Overland Mail." He took the Egyptian Hall in Piccadilly, and gave his first entertainment of "The Ascent of Mont Blanc" on the evening of the fifteenth of March, 1852.

His pictures were all drawn by William Beverley. There was one of Geneva ; another of the east end of the Lake showing the well-known Castle of Chillon. There were pictures of the Bridge and Tower of Martigny, and of the Convent of the Great Saint Bernard. There was a gruesome illustration of the dead-house attached to that monastery, an admirable delineation of the Tête Noire pass, and of Mont Blanc as seen from the summit of the Col de Balme.

The second part of the entertainment related exclusively to Chamonix and Mont Blanc. There was a picture of the Cascade des Pèlerins, and of the Pierre à l'échelle, of the glaciers of Bossons and Taconnay, of the Grands Mulets rocks by sunset, and of the passage of the Grand Plateau by moonlight. There was a gross caricature of the Mur de la Côte and of the summit, of the supposed perils of the descent, and finally an excellent picture of the courtyard of Tairraz' hotel at Chamonix. The

narrative was well told, and nothing was lost in the telling. Patter songs were interspersed. Great St. Bernard dogs lay in front of the stalls, and on the closing night of each season beautiful bouquets were presented to the ladies by the entertainer. Albert Smith's Mont Blanc "caught on," and became universally popular. Crowds of persons flocked to the show, which was patronised by Her Majesty and the late Prince Consort. The run continued for six years. The route of approach to Chamonix was constantly varied, the songs and character sketches were changed from time to time, but "Mont Blanc" was always kept as the central point of attraction. Smith is said to have made thirty thousand pounds by his entertainment. "Prosperity," says Bacon, "doth best discover vice, but adversity doth best discover virtue." Smith was laughed at for perpetually flaunting before his friends the certificate under seal which he had obtained from the "guide chef" in proof of his successful ascent, as if doubt might have been cast upon his story in the absence of such evidence. But success did him no harm. It is but just to his memory to record that he, too, was a pioneer. Mountaineering was not then a recognised sport for Englishmen. The ascent of Mont Blanc was regarded by some with growing interest, by others with a contemptuous indifference. Hitherto any information about the great mountain had to be sought for in isolated publications difficult to obtain, in the pages of magazines or the daily press. Smith brought a more or less accurate knowledge of it, as it were, to the hearths and homes of educated Englishmen.

The Annals of Mont Blanc

Up to 1851, though Mont Blanc had been climbed so often, the High Alps were practically unexplored. It is true that James David Forbes had climbed the Jungfrau in 1841, and that his great work was published only two years later, but this well-known classic dealt more with theory than with practice. Agassiz and Charpentier, both friends of Forbes, were men of science, not mountaineers. That mountaineering was certain to take its place amongst recognised English sports was obvious enough, but Smith's entertainment gave an undoubted impetus to the movement. During the very period that he was lecturing to London crowds, the work of Alpine exploration had seriously commenced. Alfred Wills and Thomas Woodbine Hinchliff added materially to our Alpine knowledge between the years 1852 and 1856. In 1854 the former gentleman climbed the Wetterhorn from Grindelwald, and Mr. E. S. Kennedy ascended one of the main peaks of Monte Rosa. In 1855, Messrs. Grenville and Christopher Smyth, with Messrs. Hudson, Birkbeck, and Stevenson, reached the highest summit of Monte Rosa, and with Mr. Kennedy climbed Mont Blanc without guides. Possibly more than enough is here recorded of the particular ascent which made Mont Blanc known to so many of our countrymen, but it must not be forgotten that scores of men who afterwards distinguished themselves in the exploration of the great Alps, first had their imaginations fired by listening to the interesting story told at the Egyptian Hall.



Albert Smith.

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CHAPTER X

THE FORMATION OF THE ALPINE CLUB AND NEW ROUTES UP MONT BLANC

BY the year 1856 increased railway facilities brought the Alps within reach of the professional classes, and many men in search of health and adventure began to make regular visits to the great playground. They went out and climbed and talked over their discoveries, but their successes were seldom chronicled. Yet it was very desirable to have accurate information as to summits that had been attained, as to difficulties that had been experienced, and as to how such difficulties could be overcome. If it were possible to gather together some of the men to whom an annual journey to the peaks and glaciers of the Alps was now becoming a matter of course; if ideas could be interchanged on Alpine geography and Alpine possibilities; if men bent on a common object could make each other's acquaintance and plan expeditions in concert, what a new field might be opened for enjoyment and exploration.

So at least thought Mr. William Mathews, fresh from St. John's College, Cambridge, who climbed Mont Velan

in 1854, and who two years later (accompanied by the author) thoroughly investigated the Val de Bagnes, ascended the Petit Combin and the Mont Avril, speculated upon the possibility of reaching the summit of the Grand Combin, or Graffeneire, and then crossing the Col du Mont Rouge from the Dranse to the yet unknown Arolla, and traversing the Col d'Hérens to Zermatt, reached that village in those older and happier days, when the little Hôtel du Mont Rose was a veritable haven of rest, and Alexander Seiler—most courteous of hosts—and his charming wife, now gone to their rest, were both blooming and young.

Visitors at Zermatt were rare at that date, and were not altogether of the same type as the herd of tourists now brought up by railway from the valley of the Rhone to crowd the hotels, not of the village only, but of the Riffel Alp and Riffelberg, and, alas! also of the once lonely and beautiful Gornergrat. The welcome company of Mr. Montagu Butler, Senior Classic at Cambridge in 1855, now Master of Trinity, and of the late Dr. Carson of Dublin, and a memorable ascent of Monte Rosa in their company, served to enforce the advantages of harmonious co-operation amongst those who were lovers and climbers of the hills.

On the first of February, 1857, Mr. William Mathews wrote a letter to his friend, the Rev. F. J. A. Hort, afterwards Professor of Divinity at Cambridge, in the following words :—

"I want you to consider whether it would not be possible to establish an Alpine Club, the members of

which might dine together once a year, say in London, and give each other what information they could. Each member at the close of any Alpine tour in Switzerland or elsewhere, should be required to furnish to the president a short account of all the undescribed excursions he had made, with a view to the publication of an annual or biennial volume. We should thus get a great deal of useful information in a form available to the members." [1]

In the month of August in the same year Mr. William Mathews met the late Edward Shirley Kennedy in the Hasli Thal. Both were bent on an ascent of the Finsteraarhorn. The party also included Mr. B. St. John Mathews, the Rev. J. F. Hardy, and Mr. Ellis, all members of the University of Cambridge. The expedition was successful, and the idea of the formation of an Alpine Club was thoroughly discussed. On the sixth of November some of the Finsteraarhorn party met at the Leasowes, in Worcestershire, and it was then decided to carry the idea into practical execution. The names of those present at that historic meeting were, Mr. William Mathews, senior, now deceased, Mr. William and Mr. B. St. John Mathews, Mr. E. S. Kennedy, and the author of this volume. Plans were fully considered, and Kennedy undertook to communicate with those who were deemed likely to join. The ground was already well prepared, and Mr. John Ball, the first President of the Club, struck the right note when he wrote in his preface to "Peaks, Passes, and Glaciers," that—

[1] "Life and Letters of Fenton John Anthony Hort." London, Macmillan, 1896, vol. i. p. 370.

"In the accidental intercourse of those who have been engaged in such expeditions, it has been perceived that the community of taste and feeling amongst those who in the life of the High Alps have shared the same enjoyments, the same labours and the same dangers, constitutes a bond of sympathy stronger than many of those by which men are drawn into association."

The original members, or at any rate those who were elected prior to 1858, were as follow: Charles Ainslie, E. L. Ames, E. Anderson, C. J. Blomfield, E. T. Coleman, Rev. J. Llewellyn Davies, A. D. Dickens, Rev. J. F. Hardy, F. Vaughan Hawkins, Robert B. Hayward, T. W. Hinchliff, Rev. F. J. A. Hort, E. S. Kennedy, Rev. J. B. Lightfoot, W. Longman, William Mathews, B. St. John Mathews, C. E. Mathews, W. R. Maynard, Francis Philips, E. B. Prest, Rev. E. J. Shepherd, Albert Smith, Rev. Isaac Taylor, Henry Trower, Rev. H. W. Watson, Robert Walters, J. B. S. Williams, Alfred Wills, C. W. Wilshire, Geo. V. Yool.

The majority are of course no longer amongst us, but it speaks volumes in favour of the healthful and invigorating nature of our pursuit that of the thirty-one original members, eleven survive; six of whom, from various causes, have fallen out of our ranks, but the remaining five still continue members of the Club which they helped to found, notwithstanding the changes and chances of forty years.

The formation of the Alpine Club is strictly relevant to the annals of Mont Blanc. Many of its members went in pursuit of new peaks, but an almost equal object of

ambition was the ascent of an old mountain from a new side ; and it is interesting to note that every discovery of a new way to the summit was made either by a member, or by one who afterwards became a member, of the newly-formed Association.

Mr. E. S. Kennedy began. It will be remembered that up to this time only one route had been discovered, that by way of the Grands Mulets and the Grand Plateau. Whether men ascended by the "ancien passage" or by the Corridor and the Mur de la Côte, mattered little, the route was practically the same. Kennedy was desirous of finding out a new way, and to dispense with the aid of guides. This was a novel departure. At that time the guidé system of Chamonix was costly and oppressive. Why should a competent mountaineer have been forced to take more guides than he required, or be unable to make a selection of those in whom he had the most confidence ?

In August, 1855, a party of young and gallant mountaineers met in the valley of Aosta. It consisted of E. S. Kennedy and Charles Hudson, of Grenville and Christopher Smyth, of E. J. Stevenson and Charles Ainslie. They crossed the Col du Géant, and, sending back their porters from the Col, endeavoured to find their way to a camping ground near the foot of the Aiguille du Midi, hoping to gain the summit of Mont Blanc from its eastern side. They did not, however, get so far as the base of the Midi, and pitched their tent at no great distance from the Col. After a wretched night they made an early start, and reached a spot between the Aiguille du

Midi and the Mont Blanc du Tacul, overlooking the Glacier des Bossons. Proceeding upward, one of the party reached the summit of the Tacul, from which he obtained a view of Mont Maudit and Mont Blanc. But the wind and the mist proved too much for them ; they retreated to the Col du Géant, descended to Courmayeur, and thence went on to Saint Gervais.

On Monday, the thirteenth, they made a new start, engaged some chamois hunters of La Villette to act as porters as far as the foot of the Aiguille du Goûter, and set out from the then well-known Alpine quarters of the Hotel Mont Joli. Passing Bionay and Bionnassay, they made for the Tête Rousse, and inspected with great interest the remains of the cabin constructed for Horace Benedict de Saussure seventy years before. Half an hour higher up they halted at two small huts, then recently erected as refuges for the benighted chamois hunter. They repaired the walls of one of the huts and improvised a roof, the porters were dismissed, the night was fine, and the bivouac sufficiently comfortable. Stevenson unfortunately fell ill and could not proceed, but the rest of the party set out at four o'clock on the fourteenth, the morning being brilliant but cold. Soon after six they were on the summit of the Aiguille du Goûter, and mounted gently towards the Dôme. Here the summit of Mont Blanc was in full view, and "seemed to hail their approach and bid them a kindly welcome." They arrived at the depression between the Dôme and the Bosses du Dromadaire, but here the old difficulty arose.

It was still held that the Bosses barred the way. The

party were unanimous in thinking that there was nothing to stop active and determined mountaineers. But the north wind was strong and cold, and instead of making the first ascent of Mont Blanc by its western ridge, as they might easily have done, they descended to the Grand Plateau, mounted from thence by the usual route of the Corridor and the Mur de la Côte, and between twelve and one were on the top, the march from the sleeping place having occupied only eight and a half hours. From the summit two of the party proceeded along the western ridge and examined the Bosses from above, but could detect nothing to prevent the ascent being made by that route. It seems a pity that so gallant a band should not have attempted to descend by the Bosses, but the idea, if ever entertained, was abandoned. Leaving the Bosses route still incomplete, the party rapidly descended towards Chamonix. Night overtook them before the village was gained, and finding a chalet full of dry hay, they slept the sleep of the thoroughly tired, creeping into Chamonix early on the following morning, unnoticed and unknown.

This was a fine expedition, and it was the first time that the mountain had been ascended from the side of Saint Gervais. Leaving out of consideration the journey of Paccard and Balmat, it was the first time that it had been climbed without guides. Hudson and Kennedy in their charming little book[1] claimed to have ascended by a new route, but it was not so. The Aiguille and the

[1] "Where there's a Will there's a Way," by Charles Hudson and Edward Shirley Kennedy. London, Longmans, 1856.

Dôme du Goûter were both well known. Guides and chamois hunters had climbed them again and again. Kennedy and his party were stopped by the same obstacle that barred the progress of Jacques Balmat. From Saint Gervais to this spot the route was not new, and directly Kennedy's party descended to the Grand Plateau they struck the ordinary route of ascent from the Chamonix side. While, therefore, every credit must be given to them for a fine performance under new conditions, it is not less the duty of an impartial chronicler of events to decline to accord them the honour of having discovered a new route up Mont Blanc. Hudson, however, was not to be discouraged by one failure. He returned to the assault in the year 1859, and settled once and for ever the question of the practicability of the Bosses ridge. Hudson's party consisted of himself, Mr. G. C. Hodgkinson, and Mr. Joad, and they were led by Melchior Anderegg. Climbing by the ordinary route to the Grand Plateau, they turned to the right and reached the depression between the Dôme and the Bosses ; ascending the two humps of the Dromedary, they gained the Calotte, and proceeding along the western ridge, duly arrived upon the summit of the mountain. And so at last the great Bosses imposture was exposed. This route, so long deemed impossible, is now, as already stated, the ordinary route to the summit from the side of Chamonix. In settled weather it presents no difficulty, but when the snow on the ridge turns to ice, or when severe wind or cold is experienced, it is still enough to test the resources of the most accomplished and determined mountaineer.



MONT BLANC FROM THE SUMMIT OF THE AIGUILLE DU MIDI. THE WESTERN RIDGE.



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This route was, after all, only a variation of the Chamonix way; as far as the Grand Plateau the track is identical. The excursion is of surpassing beauty, and there is no more magnificent walk in the Alps than the ascent of Mont Blanc by the Bosses du Dromadaire, and the descent by the Mur de la Côte and the Corridor, or *vice versâ*. The preferable line of ascent is by the Bosses, as the sun is encountered much earlier than when the mountain is taken in the opposite direction.

Hudson was a born mountaineer; no member of the early band of pioneers had a finer reputation; he was the Bayard of early mountaineering chivalry. Alas! he perished untimely in the first ascent of the Matterhorn, and lies with Hadow—one of his companions in the catastrophe—under the northern wall of the old church at Zermatt.

Mont Blanc had never yet been ascended from Saint Gervais to the summit by the whole western route. This feat was reserved for Mr. Leslie Stephen and Mr. F. F. Tuckett, who, starting from Saint Gervais on the seventeenth of July, 1861, camped in the wretched hut then recently constructed near the top of the Aiguille du Goûter, and gained the summit of the mountain on the following day by way of the Dôme and the Bosses du Dromadaire, "thus achieving the undertaking commenced by Saussure and his companions seventy-six years before." They were led by Melchior Anderegg, J. J. Bennen, and Peter Perren, and were accompanied part of the way by the Rev. W. F. Short and Mr. Mather, but the whole party suffered severely from sickness on the top of the

Aiguille du Goûter, and the two latter gentlemen were forced to return. No part of this expedition was new. From Saint Gervais to the Dôme was the route taken by Kennedy and his companions in 1855. From the Dôme to the summit was the line of ascent just made by Hudson in 1859; but it was the first time that men had climbed direct from Saint Gervais to the summit by the whole western ridge, and it constituted the second route to the summit of Mont Blanc. This line of ascent also has a rare charm. The magnificent views of the Aiguille de Bionnassay delight the traveller whilst climbing the Aiguille du Goûter. It is true that the hut on the latter peak, which until the erection of the Vallot hut was the highest, as it is still the most comfortless sleeping place in Europe, is enough to sap the vitality of any climber; but if he can dispense with sleep and bear the cold, his starting point is less than six hours distant from Mont Blanc, and the views along the whole ridge, of Switzerland, Savoy, and Dauphiné, leave nothing to be desired.

Before the formation of the Alpine Club it had long been hoped that a way might be discovered up Mont Blanc from the side of the Col du Géant. It will be remembered that this route received in early days the attention of Jacques Balmat. The only way by which an ascent was possible involved sleeping either on the Col du Géant, or, better still, on the ridge between the Aiguille du Midi and the Mont Blanc du Tacul, and then passing over that mountain and the Mont Maudit, descending to the Corridor, and finishing the climb by way of the Mur de la Côte—the end of the ordinary route

from Chamonix. There is now a fairly good hut at the foot of the Aiguille du Midi, and this hut may be reached in three ways—either from the Montanvert up the seracs of the Géant glacier, and then by way of the Vallée Blanche to the ridge; or from Chamonix to the Pierre à l'échelle, and thence up steep rocks to the left till the ridge is attained; or direct from the Col du Géant, a distance of about three hours; but from whatever point the hut is reached, the true route to Mont Blanc lies over the Tacul and the Mont Maudit to the Corridor, so that in fact two mountains have to be crossed before the summit can be attained. This route was discovered by Mr. J. H. Ramsay in the month of July, 1855. Sleeping at the foot of the Aiguille du Midi, and accompanied by several guides from Courmayeur, he crossed the Tacul and the Mont Maudit, descended to the Corridor, and mounted the Mur de la Côte. Here he was unfortunately beaten within an hour of the summit, but the new route was definitely ascertained. Eight years later, on the eighteenth of July, 1863, the complete journey was made by the eastern route by M. Maquelin and M. Briquet, two Swiss gentlemen, with several guides from Courmayeur. This was the third route to the summit.

A variation of this route was made on the twenty-ninth of August, 1888. Mr. F. A. Bowlby and Mr. J. Stafford Anderson, accompanied by Abraham Imseng and Hans Almer, left the hut on the Col du Géant about five in the morning, but instead of going so far north as the hut under the Aiguille du Midi, went about due west, and, working up a couloir, partly by rocks and partly by snow,

gained the summit of the Mont Maudit at half-past ten. They did not reach the summit of Mont Blanc until seven in the evening, after fourteen hours of continuous exertion. This variation of the Col du Géant or eastern route is shorter in distance, but far longer in time.

Practical ways having now been discovered from the north, east, and west, men began to think seriously of a way up from the south. Would it be possible to ascend direct from Courmayeur, and to cross the summit from that village to Chamonix? Now a glacier is the usual approach to any great mountain. Of all the glaciers that flow from the snow-fields of Mont Blanc none is more striking than the great glacier of Brenva, which rolls south from the Corridor, and pushes its way into the Allée Blanche almost to the pastures of Entrèves. So far back as 1855 Charles Hudson had his eye upon this route. He wrote to Kennedy on the nineteenth of May in that year, informing him that Mr. Birkbeck had inspected the mountain upwards from the Col du Géant, and downwards from the foot of the Mur de la Côte, and had come to the conclusion that it could be ascended from Courmayeur. The dread of the mountain was waning before increased knowledge and ever-increasing mountaineering experience. The Brenva glacier had a special reputation for danger. Kennedy and Hudson did not attempt it. The mountains are full of instances where some men labour and others enter into their labours. In the year 1863, Mr. A. W. Moore arrived at Courmayeur to see what could be done from that direction. He was attended by Melchior Anderegg,



MONT BLANC FROM THE WESTERN SUMMIT OF THE GRANDES JORASSES. THE EASTERN RIDGE.



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Christian Almer, and Peter Perren, and all concurred in pronouncing it "eine miserable Dummheit." In the following year Moore carefully surveyed the upper portion of the Brenva glacier from the foot of the Mur de la Côte, as Mr. Birkbeck had previously done, and at once determined that Mont Blanc should be ascended by that route, or otherwise that the reason why it was impossible should be definitely ascertained. In July, 1865, Mr. Frank Walker, Mr. Horace Walker, Mr. Moore, and Mr. G. S. Mathews were at Courmayeur. They had secured the services of Melchior and Jakob Anderegg, and of two porters, Jean Michel Lasnier and Julien Grange. They started on the morning of the fourteenth, and before six in the evening found a suitable camping place high up the Brenva glacier on its eastern side, and passed a fairly comfortable night. A little before three on the morning of the fifteenth they were *en route*. They crossed the glacier from right to left, and, climbing a rocky buttress, they made a halt at a height of 12,000 feet. Above this buttress they came upon a narrow and formidable ice arête, connecting it with the mass of Mont Blanc. Jakob Anderegg instantly attacked it without stopping to consider whether the ridge was feasible or not. It proved extremely difficult, but was passed in safety; and Moore records that, "as we looked back along our perilous path, it was hard to repress a shudder, and the dominant feeling of every man was one of wonder how the passage had been effected without accident." Pursuing their journey without further serious difficulty, they ultimately emerged upon gently sloping snow-fields, the same upon

which in the previous year Moore had gazed so lovingly from the Mur de la Côte. Moore thought that but for the labour of step-cutting the summit might have been reached from the snow-fields on which they stood, but they were heavily laden, and made straight for the Corridor, a height of 14,217 feet, which they reached soon after one o'clock. At three they were on the summit, having been climbing uphill over twelve hours. At half-past ten they reached Chamonix, after an excursion of nearly twenty hours.

If my readers will look at the picture of Mont Blanc from the south they will be able to trace the whole route. The Corridor is the lowest depression between the summit on the left and the Mont Maudit on the right. The journey from the Corridor to the summit was, of course, by the old Chamonix route, and so far not new, but every step from the lower part of the Brenva glacier to the Corridor was unbroken ground. The Col de la Brenva, now first made, was the highest and grandest pass over the chain of Mont Blanc, and for the first time men had climbed from Italy into France over the top of the mountain.[1] This was the fourth route up Mont Blanc. Frank Walker has joined the majority; and Moore, who so well served his country and his club, has also passed away.

This novel and successful ascent by the Brenva glacier caused great interest in Alpine circles, but some years elapsed before a further attempt was made to climb Mont

[1] "Alpine Journal," vol. ii. p. 369; "The Alps in 1864," a private journal by A. W. Moore, 1867.



MONT BLANC FROM THE HERBETET. THE SOUTHERN FACE.



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Blanc from the south. It was clear that there was a possible, though difficult, route by the Brenva. Was there no other glacier flowing south from which a similar attempt could be made ? There was the great glacier of Miage, flowing due south from the Col of that name direct to the Allée Blanche. The lower part of this well-known glacier is a fearful desert, so thickly covered with mountain disintegration that the ice is rarely visible, and "is anything but convenient to a traveller in haste." It was well known that three other large glaciers rolled down the western side of Mont Blanc, forming tributaries of the Glacier de Miage ; was it not possible to find a new path to the summit by way of one of these tributary glaciers ? The discovery was made by accident. Mr. F. C. Grove, Mr. E. N. Buxton, and Mr. R. S. Macdonald were at Chamonix in 1865, having made the first ascent of the Aiguille de Bionnassay. Their guides were Jakob Anderegg, Jean Pierre Cachat, and young Peter Taugwald of Zermatt. Their plan was to ascend the Dôme and get down to the head of the Miage glacier. They left Chamonix at midnight on the sixth of August, and reached the Grands Mulets soon after dawn. After a short halt they climbed to the summit of the Dôme, which they did not reach till one o'clock, after thirteen hours' hard walking from Chamonix. They then made for the depression in the great ridge between the Dôme and the Aiguille de Bionnassay, a point which had been reached from the opposite side by way of the Col de Miage the previous year by Mr. Adams Reilly, and they intended to descend by his route ; but straight in front of

them was the Glacier du Dôme, leading more directly to that of Miage. The descent looked inviting, they yielded to the temptation, and went down. The snow was in a bad state, and the party had many adventures on the route; but ultimately they traversed the Dôme glacier in safety, and reached the upper basin of the great glacier of Miage at midnight, exactly twenty-four hours from the start. Walking through the night, they arrived at Courmayeur at half-past five in the morning, "hungry somnambulists, when broad daylight and pleasant anticipation quickened the sleepy blood and lifted the heavy eyelids." [1]

This, of course, was a *tour de force*, but it was clear that the Dôme glacier could be descended from the Dôme, and equally clear, therefore, that Mont Blanc could be ascended from Courmayeur by way of the Glacier de Miage, the Dôme glacier, the Dôme, and so along the western ridge to the summit. Three years later this particular ascent was made by Mr. Frederick A. G. Brown. He was accompanied by Julien Grange, who was already familiar with the Chamonix route and that from the Col du Géant, and had acted as porter to Mr. Moore and his party as far as their sleeping place on the Brenva glacier. Now Grange had set his heart upon an ascent by the Dôme glacier. Most routes were in those days supposed to be impossible until they had been fairly tried. Even so competent a mountaineer as Mr. Moore had placed on record his opinion that no one could reach the top of Mont Blanc from the southern Miage, and Mr. Brown assumed that the ascent by the Glacier du Mont Blanc

[1] "Alpine Journal," vol. ii. p. 332.



The Dôme Route, the Aiguilles Grises, and the Glaciers of Dôme and Bionnassay.

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was wholly impracticable; but Mr. Adams Reilly, one of the ablest and most accomplished of the pioneers, had not only denied the term inaccessible to any portion of the western side, but had in his own person proved its accessibility from the Col de Miage.

Mr. Brown determined to attack the mountain from the Dôme glacier, descended, as we have seen, by Mr. Buxton and his party in 1865. He left Courmayeur on the twenty-fourth of July, 1868; Grange, with another guide and one porter, being engaged for the journey. They found a suitable gîte in some rocks on the right bank of the Dôme glacier and at a height of about 9,000 feet, and a little before four on the morning of the twenty-fifth of July dismissed their porters and took to the glacier. Before nine o'clock they were on the top of the Dôme, and about one were on the summit of Mont Blanc. They descended to Chamonix by the ordinary route, arriving a little after eight in the evening, the whole journey from the camp having occupied only between sixteen and seventeen hours. This was the fifth route up Mont Blanc, and new as far as the top of the Dôme, whence the journey was pursued by the western ridge. A shorter and better route by the Dôme glacier was discovered in 1890, and an excellent hut has been constructed at the foot of the Aiguilles Grises. This route is now, if not the shortest, certainly the most popular from the side of Courmayeur.[1]

The middle tributary of the Miage glacier having been found feasible, Mr. T. S. Kennedy, of Leeds, a dis-

[1] "Alpine Journal," vol. iv. p. 261.

tinguished climber, made up his mind to try the southern one, and on the first of July, 1872, set out from Courmayeur, accompanied by Jean Antoine Carrel and Johann Fischer, with Julien Grange as porter. After four and a half hours' walking they found a suitable camping place. On the morning of the second they sent back Grange with the bulk of their baggage, and started at three o'clock. Working up the Glacier du Mont Blanc, they kept a little to the left, and made straight for the Calotte. The rocks were steep and icy; but, climbing steadily upwards, they struck the western ridge of Mont Blanc between the upper Bosses and the summit, and in a few minutes were on the top. The climb from the sleeping place occupied ten hours.

This was the sixth route, and was known for some time as the Aiguilles Grises route, but this was a mistake. The topography of the western side of Mont Blanc was not then accurately known. Three great glaciers, as we have said, descend from the upper snow-fields into the Miage glacier almost at a right angle. The most southerly of these is the Glacier du Mont Blanc, which flows between two rocky ridges—one known as the Mont du Brouillard, and the other as the Rochers du Mont Blanc, formerly called the Aiguilles Grises. The middle glacier is the Glacier du Dôme, by which Mr. Brown ascended, and the real Aiguilles Grises are north of the Glacier du Dôme. Kennedy's track lay between the Mont du Brouillard and the Rochers du Mont Blanc. It is a magnificent route, and the shortest and most direct to the summit from the Italian side. Nearly every step was

new, and one of its chief charms lies in the fact that the climb from base to summit, with the exception of the final twenty minutes, does not strike upon any route previously discovered. In due course a hut was built on the Rochers du Mont Blanc on the site of Kennedy's camp.

Many years ago the author, in company with Mr. Frederick Morshead and Messrs. Henry and William Pasteur, crossed Mont Blanc from Courmayeur to Chamonix by Kennedy's route, and had the pleasure of meeting the eminent Signor Quintino Sella on the way. Signor Sella, who was then advancing in years, took four days to cross the mountain—the first from Courmayeur to the hut on Kennedy's camping site; the second to a higher gîte where the Sella hut is now erected; the third from thence over the summit to the Grands Mulets; and the fourth from the Grands Mulets to Chamonix.

Maps, like mountaineers, have been the subject of evolution. The first good map of the Chain of Mont Blanc we owe to Mr. Adams Reilly; it was made from his own survey, and completed in 1864. It clearly shows both the Glacier du Mont Blanc and the Glacier du Dôme, and was a noble beginning; but it does not even mention the Aiguilles Grises or the Mont du Brouillard. Then came the greatly improved map of the "Massif du Mont Blanc" published in 1865 by M. Mieulet, by order of the French Minister of War; but this map describes the rocky ridges on both sides of the Glacier du Dôme by the one name of the "Aiguilles Grises"; and finally came

that most excellent map of "La Chaine du Mont Blanc," published in 1896, the work of M. Albert Barbey (President of the Diablerets section of the Swiss Alpine Club), with the assistance of M. X. Imfeld (a member of the Federal Staff) and M. Louis Kurz. To this faultless production all explorers of the Chain are deeply indebted, and for the first time the Mont du Brouillard, the Glacier du Mont Blanc, the Rochers du Mont Blanc, the Glacier du Dôme, and the Aiguilles Grises are all beautifully delineated with scrupulous fidelity to nature.

Notwithstanding the exploits of Mr. Moore, Mr. Brown, and Mr. Kennedy, visitors to the glaciers falling south from Mont Blanc were but few in number. On reference to the picture of Mont Blanc from the south it will be remarked that in addition to the Brenva glacier two smaller glaciers fall towards the Allée Blanche, and that between them rises a steep and rocky escarpment which extends to the snow-fields at the foot of the great rocks which form the summit of the mountain. These glaciers are the Brouillard and the Fresnay glaciers. It occurred to Mr. J. Eccles, one of the most able and persistent of the explorers of the Chain, that a new way might be discovered by one or other of them, or by the rocks of Mont Brouillard which form the western boundary of the glacier of that name. Part of the route had been previously explored by Mr. John Birkbeck and Mr. Utterson Kelso, but without result. In the month of July, 1875, Mr. Eccles, accompanied by Michel Payot of Chamonix, and two porters, set out from

Courmayeur. They ascended by the rocks and grass slopes to the west of the end of the Fresnay glacier, and then getting on to the Brouillard side of the ridge, found a gîte overlooking the little glacier of Chatelet. Starting at three the next morning they worked up the glacier of Brouillard, hoping to gain the south arête of the Mont Blanc de Courmayeur. In this attempt they were defeated, and retraced their steps to the ridge between the Fresnay and Brouillard glaciers. Here they examined with great care the southern rocks of Mont Blanc, but they could find no passage and came back disheartened. But Mr. Eccles returned to the charge two years later. Ascending the Cramont he carefully inspected through a glass the great south-eastern arête which stretches from the Mont Blanc de Courmayeur to the upper snow-fields of the Fresnay glacier, and came to the conclusion that there was no insuperable difficulty. He started at three on the morning of the twenty-eighth of July, accompanied by Michel and Alphonse Payot and two porters. At two o'clock in the afternoon they attained a height of 12,400 feet, and found some comfortable rocks overlooking the highest icefall of the Fresnay glacier. Here they dismissed their porters and established their quarters for the night. The next morning they encountered snow and rain, and for the second time a melancholy retreat was inevitable.

But the weather changed, as it always does if only one has time to wait long enough, and on the evening of the thirtieth of July the party were again at the sleeping place. Leaving at three on the morning of the thirty-

first, and after considerable difficulty owing to ice-glazed rocks, they crossed the upper basin of the Fresnay glacier and reached the base of a great couloir which descends from the arête connecting the Mont Blanc de Courmayeur with the Aiguille Blanche de Péteret. Then came five hours of continuous step-cutting in hard ice till the ridge was attained. Thence, to the top, the way was laborious, but not particularly difficult; they reached the Mont Blanc de Courmayeur about half-past eleven and the true summit at half-past twelve. Mr. Eccles descended by the Bosses du Dromadaire and reached Chamonix before five in the afternoon. The ascent from the sleeping place thus took nine and a half hours, but the start was made from a height of 12,400 feet.[1] This was the seventh route to the summit. Men had now crossed from Italy to France over the great mountain by five different routes, but every part of the way taken by Mr. Eccles was practically new. His expedition involved over six hours' step-cutting, but it was really a *tour de force* and has been rarely repeated. Variations of this route have been made. The Col de Péteret has been reached from the side of the Fresnay glacier by a route slightly differing from that taken by Mr. Eccles, and also from the side of the Brenva glacier. The latter expedition was made by Herr Paul Gussfeldt, a mountaineer of the first order, who, having climbed the Aiguille Blanche de Péteret, proceeded by way of the Col de Péteret and the Mont Blanc de Courmayeur to the true summit.[2]

[1] "Alpine Journal," vol. viii. p. 409.

[2] "Der Mont Blanc," Von Paul Gussfeldt, Berlin, 1894.



MONT BLANC FROM THE AIGUILLE NOIRE, SHOWING ALSO THE MONT BLANC DE COURMAYEUR.



New Routes up Mont Blanc

Such are the various routes by which Mont Blanc has been climbed. To summarise :—

ROUTE I., from Chamonix on the north by way of the Grands Mulets and the Grand Plateau, with the following variations :

(*a*) The "ancien passage."

(*b*) The Corridor and the Mur de la Côte.

(*c*) The Bosses du Dromadaire.

ROUTE II., from Saint Gervais on the west, by way of the Aiguille and Dôme du Goûter, the route from the Dôme striking on variation *c* of Route I.

ROUTE III., from the Col du Géant on the east by way of the hut at the foot of the Aiguille du Midi (attainable from three directions), and thence by the Mont Blanc de Tacul and the Mont Maudit, the route from the Corridor striking on variation *b* of Route I. Variation by the couloir between Mont Blanc de Tacul and Mont Maudit.

ROUTE IV., from Courmayeur on the south by the Brenva glacier, the route from the Corridor striking on variation *b* of Route I.

ROUTE V., from Courmayeur on the south by the Miage and Dôme glaciers, the route from the Dôme being the same as Route II. and variation *c* of Route I. Variation from the glacier of Miage by way of the Italian glacier of Bionnassay to the Dôme. Variation by way of the Dôme glacier slight and unimportant.

ROUTE VI., from Courmayeur on the south by the Miage and Mont Blanc glaciers, striking no previous

route except at the outset and the last twenty minutes, where it touches variation *c* of Route I.

ROUTE VII., from Courmayeur on the south by the Brouillard glacier, where, except for the walk up the Allée Blanche, no other route is ever touched in any part of the journey. Variation from the Miage glacier to the Col de Péteret.

Mr. Louis Kurz, in his most admirable guide to the Chain of Mont Blanc, gives eleven routes to the summit, but they are practically identical with those already described. He treats the routes from Chamonix as three separate routes, and not as one route with two variations. He treats Mr. E. S. Kennedy's as a separate route, a course in which, for the reasons already stated, the author is unable to concur, and he claims the Bionnassay glacier as a separate route, while the author considers it a variation, though an important variation, of that by the Dôme glacier.

What is an independent route? It is impossible to dogmatise on such a question; men may fairly differ in opinion upon the subject. It may be suggested, however, that any distinct glacier, or any rock or snow arête by which the summit of a mountain is approached, constitutes a route which may be termed independent. But if this doctrine is sound, the route by the Bionnassay glacier would be independent, and this would constitute the eighth route by which Mont Blanc may be ascended; but inasmuch as men must approach the Bionnassay glacier by the same route from Courmayeur as the Dôme

glacier route, and inasmuch as the moment the Dôme itself is reached the two routes to the summit from that point are identical, it seems reasonable rather to class it as a variation of the Dôme glacier route than an independent route to Mont Blanc.

The great mountain has now been thoroughly and completely explored. Climbs of the first order have been made by able mountaineers, involving, more or less, combinations of well-known routes,[1] but the only novelty the author can suggest is that a way should be tried direct from the snow-fields below the Col de la Brenva to the summit, entirely on the southern side, and thus complete the route made by Mr. Moore and his party in 1865, thereby ensuring two ascents from Courmayeur which would be wholly independent of any other routes whatever.

[1] NOTE.—Messrs. Mummery, Collie, and Hastings repeated in 1894, without guides, the Brenva route taken by Mr. Moore and his party, and struck the ridge on the left of the Corridor, close to the Petits Mulets.

CHAPTER XI

FATALITIES

FROM the earliest ascent of Mont Blanc in 1786 down to the year 1820, no life had ever been lost upon the great mountain, though many travellers and a far greater number of guides had already gained the summit.

The parties which attacked it were invariably large, and the precautions taken to avoid disaster were, in those days, always ample, and sometimes excessive. Increasing knowledge of the mountain, however, and the well-founded belief that its dangers and difficulties had been exaggerated, had the inevitable tendency to produce indifference. The more men knew of the right means by which to avert danger, the less sometimes were the precautions taken. In settled weather caravans went up and down, without accident and apparently without risk. Parties became smaller and smaller ; as time went on, the constant pressure of the rope was found inconvenient and irksome. Travellers began to take the view of the great Tartarin ; surely the persistent advice of the guides to take this or that precaution was unnecessary,

surely they were making more of their great mountain than it deserved! The terrible death-roll of Mont Blanc tells a different tale. The older mountaineers almost boasted that their pursuit had a special immunity from danger. Hudson and Kennedy, writing in 1856, call attention to the great loss of life on English rivers, such as the Thames or Severn, in the hunting-fields of Oxfordshire or Leicestershire, in the English woods or on the Scottish moors. "But who repeats in tones of sorrow the name of friend or relative that has perished amid the solitudes of the higher Alps? The Jungfrau's spotless snows, the crested summits of the Wetterhörner, Monte Rosa's craggy peaks, are all guiltless of the traveller's blood. These and many other lofty pinnacles of Switzerland have welcomed the adventurous mountaineer, and death or severe accident is unknown." The authors of this passage give the Hamel catastrophe as the only exception to the general rule, but they had not the gift of prophecy. The very mountains quoted by them have since had their special victims, and there are few of the great Alpine peaks that have not been in later years the scenes of some disaster.

Every mountain must be approached with respect, or it will punish the reckless and incompetent tyro who invades its fastnesses with too light a heart. Many years ago Mr. Leslie Stephen, one of the most competent and one of the most prudent of the old guard, gave advice which is too rarely borne in mind. "The modern race of mankind is in too great a hurry. It refuses to serve an apprenticeship to anything. It believes

that by a little happy audacity and the expenditure of enough money it can leap over all preparatory stages. Mountaineering, like so many other things, has become a fashion with many who don't really care about it, and the mountains have taken a terrible revenge."

There is but slight difficulty or danger in climbing Mont Blanc when the weather is settled, and under favourable conditions of snow; but its height is so great and its snow-fields are so vast, that when the weather is unsettled, or when the snow is soft and treacherous, it becomes one of the most dangerous mountains in the Alps.

Accidents have happened from many causes: from a lack of knowledge of the effects of cold; from ignorance of the risk of avalanches after fresh snow, or when the *Föhnwind* is blowing; from inability to understand the position of concealed crevasses; from an improper use of the rope—the climber's best friend; from the incompetence of guides; from stupidity, carelessness, and presumption. It is not too much to say that of all the sad fatalities in the history of Mont Blanc few have resulted from real accident, or could not have been prevented by the exercise of reasonable care and foresight.

Let us enumerate these fatalities in chronological order.

In the month of August, 1820, Dr. Joseph Hamel, a Russian savant and Counsellor of State to the Czar, attempted to ascend the mountain from the village of Chamonix. He was desirous of making observations as to the effect of rarefied air upon animal organisation, and he obtained the loan of various scientific instru-

ments from Professor Pictet and M. de Saussure. He was accompanied by M. Selligue, a mechanician of Geneva, and by two English gentlemen, Mr. Joseph Dornford and Mr. Gilbert Henderson, both of the University of Oxford. They took, as they were advised, twelve guides, three for each traveller, and set out on the eighteenth of August, the whole party reaching the Grands Mulets in the evening. Clouds rose in the west, and a heavy thunderstorm broke over their camp. They remained where they were the whole of the following day, the weather being very uncertain, and two guides were despatched to bring up fresh provisions. Early on the morning of the twentieth the party started again, excepting M. Selligue, who was ill, and who after two nights of solitude had come to the conclusion "that a married man had a sacred and imperious call to prudence and caution where his own life seemed at stake; that he had done enough for glory in passing two nights in succession perched on a crag like an eagle, and that it now became him, like a sensible man, to return to Geneva, while return was yet possible." Under these circumstances two guides remained to bear him company. The remainder of the party, eleven in all, reached the Grand Plateau without difficulty, and Hamel actually "wrote two notes to announce his arrival on the summit, leaving a blank merely to insert the hour."

Proceeding by way of the "ancien passage," the only route by which the mountain had yet been ascended, they climbed most of the distance between the Grand Plateau and the Rochers Rouges. Suddenly Hamel felt

the snow giving way under his feet. He plunged his alpenstock into it, but without effect, and was forced downwards with irresistible power, the snow engulfed him, he expected to be crushed, and could scarcely breathe. At first he was under the impression that he was the only person affected, but having succeeded after a desperate struggle in getting his head above the snow, he became aware that the whole party were being borne down by a great rush of snow started by their own weight, towards a crevasse which yawned beneath them. When at length they stopped, he observed Henderson close to the abyss. He then saw Dornford and three guides, but no others. The avalanche had rolled down the "ancien passage," and poured into the huge crevasse at its foot, filling it to the brim. The party had been carried down twelve hundred feet. A terrible panic set in. The guides lost all self-control. Some walked about aimlessly, uttering loud cries. Matthieu Balmat sat in sullen silence, rejecting all kind offices with an irritation which made it painful to approach him. Dornford threw himself on the snow in despair, and Henderson, says Hamel, "was in a condition which made one fear for the consequences." A few minutes later two other guides extricated themselves, but the remaining three were seen no more. Hamel and Henderson descended into the crevasse and made every possible attempt to find the lost guides, but without avail; the surviving guides forced them to come out, and sore at heart they returned to Chamonix.[1]

[1] "Bibliotheque Universelle," Genève, August, 1820.

The three guides who were lost were Pierre Carrier, Pierre Balmat, and Auguste Tairraz. They were the three foremost in the line and felt the first effects of the avalanche. Matthieu Balmat, who was fourth in the line, saved himself by his great personal strength and by presence of mind. Julien Dévouassoud was hurled across the crevasse, and Joseph Marie Couttet was dragged out senseless by his companions, "nearly black from the weight of snow which had fallen upon him."

Such was the well-known "Hamel catastrophe." [1] It is easy to be wise after the event, but with our present knowledge it would not have occurred. It does not appear that any of the party were roped at the time of the disaster. Dornford tells us that the party were roped in threes between the Grands Mulets and the Grand Plateau, but he adds, with reference to the accident, "All such plans as that of fastening themselves together with a rope would be utterly useless, besides the insupportable fatigue which this method of proceeding would occasion." It is certain that though fine on the morning of the attempted ascent, the weather was very doubtful, and the wind was south. In other words, the weather was avalanche weather, in which the excursion should not have been attempted, and it is quite

[1] NOTE.—Dr. Paccard's diary contains comments on this accident. He again states that Julien Dévouassoud was his son-in-law—(he married Josephine, the Doctor's only daughter)—that when Dévouassoud got out of the crevasse he found the "son of Marie Couttet imbedded up to his neck in the snow, and released him and he adds that Couttet blamed Dr. Hamel, affirming that he was the cause of the disaster, as he had insisted on making the ascent although the weather was unfavourable.

probable that if the rope had been used the three guides might have been saved.[1]

Many years after the accident speculation became rife as to the probability of the remains of Hamel's guides being ultimately discovered. Scientific men had paid great attention to the subject of glacier motion, and James David Forbes had proved by his experiments on the Mer de Glace that the rate of motion of that glacier was roughly two feet each day.[2] Hamel, who did not know much of the subject, suggested that the remains might be found in a thousand years; but Forbes, from the knowledge then acquired of the rate of the motion of the Glacier des Bossons, confidently predicted their discovery after a lapse of about forty years. As usual Forbes was right. From the crevasse at the foot of the Rochers Rouges to the base of the Glacier des Bossons is a distance of about six miles, and there on the fifteenth of August, 1861, Forbes' bold prediction was verified, and the ice gave up its dead. On that day, Ambroise Simond, a Chamonix guide, discovered near the lower end of the Glacier des Bossons portions of clothing and some human remains. In the middle of June, 1863, Mr. H. J. Rouse, strolling near the same spot, found a large piece of a human body protruding from the ice. He tried to dig it out, but having no proper tools and much rain falling, abandoned further search for that time. A few days later a more careful inspection of the glacier

[1] Hamel's account appears in *The New Monthly Magazine*, 1821.

[2] NOTE.—Much depends upon the steepness of the bed down which the glacier slides

was made, and various relics were discovered. In the month of August, part of an alpenstock, a crumpled book, the iron frame of a lantern, and fragments of a human skull were found by Mr. Browning and Mr. Blanford. Further relics were found as late as 1865. The head of one of the unfortunate victims was actually identified after an entombment of forty-three years. Among other discoveries was that of a human hand which had grasped an alpenstock with such force that part of the wood was found adhering to the palm; shoes, gloves, and ropes; a hat which belonged to Pierre Carrier, a cooked leg of mutton, and the compass and hygrometer of Dr. Hamel, which were carried by the leading guides. Even the wing of a pigeon was discovered, part of the bird which Pierre Carrier took up with him in an old kettle. The head and the hand were those of Pierre Balmat, and both were identified by Joseph Marie Couttet, who, as above mentioned, barely escaped destruction.

We have only to deal with fatalities which actually occurred on Mont Blanc, but as any route by which the mountain is immediately ascended is necessarily part of it, the accident on the Col du Géant, which comes next in order, must be recorded. It occurred on the fifteenth of August, 1860, forty years after the Hamel disaster. Three English gentlemen, Mr. J. M. Rochester, Mr. F. Vavassour, and Mr. B. Fuller, were crossing the Col du Géant from Chamonix to Courmayeur. They were accompanied by Frédéric Tairraz and two other guides of Chamonix. They did not reach the summit of the

Col till late in the afternoon, and were much fatigued by the climb. Instead of descending by the rocks they went down a slope of soft snow. The proper use of the rope was now well known, but the usual precautions were contemptuously disregarded. The three Englishmen were tied together, but the first and last guides simply held the ends of the rope in their hands, while Tairraz, the chief guide, contented himself by holding on to it as he walked by the side of the party. A slip occurred. The rope was of course at once jerked out of the incompetent hands which held it. The first and last guides saved themselves, while the Englishmen went at once to destruction. There is little doubt that Tairraz could have saved himself without difficulty, for he was free and had a good ice-axe, but as leading guide he was responsible for the disaster, and declining to survive it, went down with the Englishmen. This was the kind of accident for which there is no possible excuse. The slope is easy, and although there are rocks which form the usual route, the guides foolishly took to the snow to reduce the fatigue of their already exhausted employers. Even then, if they had been properly roped, and had made good use of their ice-axes at the moment the slip occurred, the catastrophe might easily have been averted.

On the ninth of August, 1864, another life was lost upon the mountain. Two Austrians were descending Mont Blanc, and had reached the Grand Plateau. One of their porters, Ambroise Couttet, preceded them unroped. He fell into a crevasse before the eyes of his companions. The crevasse was excessively deep, the cold was intense,

and the guides, convinced that Couttet was dead, went on to Chamonix. The same evening a party of guides went up in the hope of recovering the body. Michel Payot and Simon Pierre Benoit were lowered into the crevasse to a depth of ninety feet, but they did not reach the body and the search was abandoned. The accident was of course attributable to the gross neglect of the most obvious of all precautions.

In the year 1866, Sir George Young, accompanied by his two brothers, climbed Mont Blanc without guides. They ascended by the Bosses route, and returning, reached the head of the "ancien passage." Here they looked for tracks, but could find none, so they made for the usual line of descent, by the Mur de la Côte. In doing this one of the party slipped, and dragged the others down with him. The slope suddenly becoming steeper they bounded into the air, and fell some fifteen or twenty feet. Two of the party were absolutely uninjured, but Mr. Bulkeley Young had unhappily fallen upon his head and broken his neck. The accident occurred on the twenty-third of August. In this case it is unnecessary to impute blame to any one, but it is desirable to assert that if experienced guides had been of the party, it is more than probable that no disaster would have occurred.

In the same year, on the thirteenth of October, another catastrophe happened almost identical in character with that which overtook the party of Dr. Hamel. Captain Arkwright was climbing Mont Blanc by the "ancien passage." His leading guide was Michel Simond. He had two others, François and Joseph Tournier, and two

volunteers, Sylvain Couttet and a servant from one of the Chamonix hotels. The two latter were roped together, Arkwright's party were on a separate rope. Suddenly an avalanche fell from above. Couttet with a great effort dragged the servant out of the track. The avalanche fell upon Captain Arkwright and his three guides, who were at once overwhelmed. The only difference between Hamel's accident and this, was that in the former case the snow slipped with the party, and in the latter the avalanche fell upon them. There is little doubt that the "ancien passage" was in bad condition, and the guides ought to have known it and avoided it accordingly. Sylvain Couttet, though on this occasion a volunteer, was an excellent guide, and had presence of mind enough to save himself and his companion. Captain Arkwright took what guides he could get, probably those who were on the rota for the day. At Chamonix, unhappily, such folk are seldom to be depended upon when real emergencies arise. This catastrophe resembles that of Dr. Hamel's in another respect. The bodies of the guides who perished with Arkwright were recovered soon after the accident, but that of Arkwright himself was buried too deeply to be found. On the twenty-second of August, 1897, his remains were discovered on the left bank of the Glacier des Bossons, and were reverently interred at Chamonix after an interval of thirty-one years. Here was another illustration of how even the most fragile articles can bear ice pressure for so long a time. "A pocket-handkerchief was intact, the coloured border scarcely faded, and the marking, in ink, quite perfect. The shirt had been torn to pieces, but two

of the studs and the collar-stud were found intact in the buttonholes. There was a gold pencil-case which would still open and shut, with lead which would still mark. Most remarkable of all was the watch-chain, made of solid gold links, perfectly plain; not a scratch was visible, and the gold was as clean as if it had just been rubbed up for wear." [1]

In the year 1870, on the second of August, Mr. and Mrs. Marke, accompanied by Miss Wilkinson, two guides and a porter, reached the top of the Corridor on their way up Mont Blanc. The ladies were greatly fatigued and were left on the Corridor with the porter, Olivier Gay, while Mr. Marke continued the ascent with the two guides. When climbing the Mur de la Côte he heard loud cries, and at once returned to the Corridor. He found Miss Wilkinson alone; Mrs. Marke and the porter had disappeared. It was very cold and the ladies desired to walk about. Of course they had no rope, and Mrs. Marke and Gay walked straight into a crevasse and were immediately killed. This is another unhappy instance of the culpable neglect of the most ordinary precaution.

In the same year, on the sixth of September, occurred the most lamentable catastrophe ever known in the annals of Alpine adventure. The weather was uncertain and dangerous, and two competent English mountaineers who had just had a very narrow escape on the mountain had come down to Chamonix. There they found a Mr. Randall, "an intense mountain enthusiast," who was rather stimulated than deterred by their account of the

[1] "The Alpine Journal," vol. xviii., p. 561.

difficulties they had experienced. Mr. Randall was joined by Mr. J. Bean and the Rev. G. McCorkindale. All three were without training and without experience, but they determined to climb the mountain together. They engaged eight guides and porters, and those probably about the worst who were then on the Chamonix roll. The party reached the Grands Mulets on the evening of the fifth, and started again on the following morning, leaving their only compass behind them. The ascent was made by way of the Corridor and the Mur de la Côte. The moment they reached the summit a furious storm burst upon them. What actually happened no man can tell, for not one of the eleven ever returned. The only evidence we have of the disaster is a written statement made by Mr. Bean when he was almost *in extremis*; but reasonable conjectures can be made from the position in which some of the bodies were afterwards discovered. The weather was very bad for the twelve following days, and search parties, although organised, were unable to proceed. On the seventeenth, however, a little higher than the Mur de la Côte, McCorkindale and two porters were found lying together unroped. Higher up Mr. Bean and one porter were found with all the baggage of the party. The bodies of Mr. Randall and of the other guides and porters were never discovered, though they were searched for during three days by the best of the Chamonix guides. On the body of Mr. Bean the following diary was found :—

"Tuesday, September 6th. I have made the ascent of

Mont Blanc with ten persons—eight guides, Mr. McCorkindale and Mr. Randall. We arrived on the summit at half-past two o'clock. Immediately after leaving it, I was enveloped in clouds of snow. We passed the night in a grotto excavated out of the snow, affording very uncomfortable shelter, and I was ill all night. September 7th—morning. Intense cold—much snow, which falls uninterruptedly. Guides restless. September 7th—evening. We have been on Mont Blanc for two days in a terrible snowstorm; we have lost our way and are in a hole scooped out of the snow at a height of 15,000 feet. I have no hope of descending. Perhaps this book may be found and forwarded. We have no food. My feet are already frozen and I am exhausted. I have only strength to write a few words. I die in the faith of Jesus Christ, with affectionate thoughts of my family—my remembrances to all. I trust we may meet in heaven."

The story is pitiful in the extreme; but what can be expected, when the opponents of the fierce forces of nature, are incompetent adventurers and untrustworthy guides?[1] Oh for an Almer or an Anderegg in such an emergency! One single capable man would have forbidden the expedition or averted the disaster.

On the fourteenth of September, 1873, Professor Fedchenko, a Russian savant, known by his mountain travels in Siberia, lost his life at the foot of the seracs of the Géant glacier. He had desired to ascend the Col

[1] "The Alpine Journal," vol. v. p. 193.

du Géant only, and to return to Chamonix the same day. His arrangements were badly made. He did not leave the Montanvert till eight in the morning, and consequently did not arrive at "La Vierge" (about an hour from the summit) till the heat of the afternoon. He had with him Joseph and Prosper Payot. A storm burst upon them with great violence. Wet to the skin and half frozen by the bitter wind, they retraced their steps. They recrossed the seracs, but Fedchenko, who was very lightly clad, was quite exhausted, and the two Payots had to carry him. They reached the moraine of "La Noire" at nine in the evening, when Joseph Payot, an incompetent guide, became nearly as much exhausted as his employer. The night was dark. The storm continued and they remained huddled together till two the following morning. Prosper Payot, who behaved well, kept his brother and Fedchenko moving. At last the traveller fell into a lethargy. Prosper had to shake and kick his brother to prevent him also from falling asleep, and then came to the conclusion that as his employer was "as good as dead," he had better try to save his brother and himself. They left Fedchenko on the rocks, and reached the Montanvert about five in the morning in a very exhausted and pitiable condition. This accident was the result of the Chamonix system, by which a guide is paid according to the distance he goes. To the seracs of the Géant, their fee would have been ten francs each ; to the summit of the Col, forty francs. They pushed on for the sake of extra pay, in defiance of ordinary prudence, and lost their nerve when they encountered real danger.

To have left their employer alone on the moraine whilst still alive was an outrageous proceeding; and it is manifest that if Prosper Payot could rescue his brother by starting from the moraine at two in the morning, the Professor could have been saved if both brothers had insisted on his descending, instead of halting on the moraine at nine on the previous evening.

On the thirtieth of August, 1874, Mr. J. A. G. Marshall, of Leeds, left Courmayeur with the intention of climbing Mont Blanc by the Brouillard glacier. His guides were well-known men, Johann Fischer of Meyringen, and Ulrich Almer of Grindelwald. They camped out on the mountain, but the following day were unsuccessful. They turned back too late, and found themselves at nightfall on the ridge at the head of the Brouillard and Fresnay glaciers. Here they ought to have passed the night, but being anxious to reach their bivouac they waited for the moon to rise and then proceeded slowly downwards. One asked the hour, and was told that it was midnight. Fischer was leading, when suddenly the snow gave way under them, and all three fell into a crevasse. Mr. Marshall's skull was fractured, and he was instantly killed, and Fischer was so seriously injured that he did not long survive. Almer was not much hurt, and when daylight came he crept out of the crevasse and walked down to Courmayeur. Mr. Marshall was an excellent climber, and his guides first rate, but they would have done better to halt, whatever the inconvenience, when daylight disappeared. The most competent men are helpless when struggling with the

difficulties of an unknown glacier in the middle of the night.[1]

On the nineteenth of July, 1882, two men were killed on one of the buttresses on the south side of Mont Blanc —the Aiguille Blanche de Péteret. One was the well-known guide, Johann Petrus, the other was Francis Maitland Balfour. Mr. Balfour had won great distinction at Harrow and at Cambridge, was a Fellow of the Royal Society, had a splendid scientific reputation, and a personal charm of manner which endeared him to countless friends. This Aiguille was then unclimbed, and its conquest was naturally a great object of ambition. The well-known Emile Rey, who afterwards perished on the Aiguille du Géant, was invited by Mr. Balfour to accompany him, but declined, as he considered the snow to be in a dangerous condition. Mr. Balfour did not agree with him, and started, accompanied only by Petrus. They did not return. A search party was organised, and some days later their bodies were found on the rocks between the glaciers of Brouillard and Fresnay at the foot of a steep arête. They had not succeeded in climbing the mountain. The accident happened from a slip on rocks, but how the slip occurred no one will never know. A peak like the Aiguille Blanche demanded an exceptionally strong party, personal fitness, and favourable conditions of snow. Mr. Balfour was an admirable mountaineer, but was not in robust health, the snow was not in

[1] "The Alpine Journal," vol. vii. p. 110

good condition, and only two persons formed the party for the ascent of an unknown mountain.

On the first of August, 1885, two Italian gentlemen, without guides, attempted the Col du Géant from Courmayeur. One was Signor Mario Rey. A little below the top of the pass Signor Rey seized a boulder, which he displaced, and which in its fall carried him down about five hundred feet. His body was covered by a great mass of stones, and was extricated with considerable difficulty. The traveller was seventeen years of age, and only two persons were of the party.

On the twelfth of August, 1890, one Gratien Brunod, a Courmayeur guide, was on the top of the Col du Géant with two Italian climbers. Attempting to get some water in the neighbourhood of the hut, he lost his footing, fell down a thousand feet, and was immediately killed.

A few days later in the same year another melancholy accident occurred. On the eighteenth of August the Count di Villanova, accompanied by Jean Joseph Maquignaz and Antonio Castagneri (two of the ablest guides in the Alps) and two porters, set out from the Cantine de la Visaille to ascend Mont Blanc by way of the Dôme glacier. The day was fine, but there was a *Föhnwind*, and from the summit of the Grandes Jorasses, then quite clear, another mountaineer watched an ominous cloud settling over Mont Blanc. He expressed to his guides the earnest hope that no one might be sleeping out for the great mountain. It is

by no means unusual for storms to assail Mont Blanc when all other peaks in the chain are clear. That night Villanova and his party slept near the Dôme glacier, and tried the ascent on the following day. Neither he nor any member of his party has ever been heard of since. Bad weather lasted for several days, but the utmost efforts were made to discover the bodies. Traces were followed up the Dôme glacier to the ridge connecting the Aiguille de Bionnassay with the Dôme du Goûter, but no further. Probably the party were blown off the ridge, and five men perished untimely, whose bodies may some day be discovered on the French Bionnassay glacier.

On August the twentieth, 1891, Herr Rothe, the Count de Favernay, three guides, and two porters slept in the Vallot hut at the foot of the Bosses du Dromadaire. The weather made the ascent impossible, and on the afternoon of the twenty-first, the bad weather continuing, they started for the downward journey. Four workmen who had been engaged on the Observatory descended with them, and the whole eleven were attached to one rope. While crossing the Petit Plateau, they were struck by an avalanche of exceptional volume, which fell from the snow cliffs of the Dôme and swept across the Plateau, forcing five men into a crevasse. Three were extricated, but Rothe and his guide Michel Simond were killed. The party should have been on three ropes and have kept carefully away from the Dôme side of the glacier. Bad weather, and probably bad guiding, were the causes of this disaster.

Fatalities

On the twenty-fifth of August, 1892, Mr. Richard Lewis Nettleship, a distinguished Fellow and Tutor of Balliol College, Oxford, lost his life on the mountain. He started from the Col de Voza early on the twenty-fourth, and reached the Aiguille du Goûter at one in the afternoon. The morning was fine, but there were indications of a change, and heavy clouds were rolling up from the south when the Aiguille was attained. His guides were Alfred Comte and Gaspard Simond, Chamonix men of poor repute. Instead of instantly retreating, they hoped they might be able to reach the Vallot hut, two or three hours distant; but within an hour from the Aiguille the storm burst and the party were enveloped in a "tourmente." They lost their way, and after wandering about for some hours vainly endeavouring to regain it, they dug a hole in the snow and passed the night there. Mr. Nettleship was in good spirits, though the storm continued the whole of the night. On the morning of the twenty-fifth it was still snowing hard, and the guides pressed Mr. Nettleship to stay where he was, but he refused, saying it was idle to remain there and die like cowards, and that they must make an effort to get away. He started, the guides following him. After walking a little way he became unsteady and stumbled, then cried out and fell forward, and bidding them goodbye, expired. The guides, on the weather clearing a little, made for the Vallot hut, and the next day descended to Chamonix, and the body was afterwards discovered and brought down.

On the twenty-seventh of August, 1893, Signor Poggi was killed by a falling stone on the Aiguille Noire de Péteret, on the south side of the mountain. Many men have been injured from the same cause, but this is the only instance, says Mr. Whymper, where a mountain climber in the Alps has been thus killed outright. Probably it was a real accident and unavoidable.

In the following month an Italian artist, Signor Cumani, attempted to ascend Mont Blanc by the Brenva glacier *alone*. He has never been heard of since.

On the eighteenth of August, 1895, three more lives were lost. On that day Mr. Eccles found an ice-axe lying on the snow just below the Petit Plateau. Thinking it belonged to one of the numerous porters on the mountain, he stuck it upright and proceeded on his journey. On his return he found the axe still unclaimed. On the twenty-fifth, inquiries were made by telegraph from Courmayeur with regard to two guides, who had not been heard of for several days. It appears that Dr. Robert Schnürdreher, an advocate of Prague, had crossed the Col du Géant with two guides of Courmayeur, Michel Savoix and Laurent Brun. The party afterwards ascended Mont Blanc. As they did not return, Mr. Eccles suggested that the glacier should be examined in the neighbourhood of the unclaimed ice-axe. The gallant Michel Payot headed a search party, and in a crevasse below the ice-axe, the three bodies were found entombed. The ascent of the

mountain had been made in one day, and the party on their return slept in the Vallot hut. Now in descending Mont Blanc in the middle of the day, men often make a series of glissades nearly all the way from the Grand Plateau to the Grands Mulets. The snow is soft, and to glissade is therefore safe and easy. Schnürdreher and his guides forgot that in the early morning, when they began to descend, the snow is hard, and glissading consequently dangerous. They must unfortunately have tried this method of progress, lost all control of their course, and fallen headlong into a crevasse. Wanton carelessness was the cause of the disaster.

An American gentleman of the name of Reigel, who had previously climbed Mont Blanc *alone* from the Chamonix side, attempted the same feat from Courmayeur. He lost his life on the Dôme glacier on the fourteenth of July, 1898.

It will thus be seen that the death-roll of Mont Blanc contains the names of forty-seven persons. It is impossible to ponder on this sad record without humiliation and even anger, at a loss of life to so large an extent avoidable. The rules to be followed and precautions to be adopted are now so well known that to break them is the worst of all offences, for it is a sin against light and knowledge.

Men who love the mountains for their own sake, for the lessons they can teach and the happiness they can bring, must insist, in season and out of season, upon the observance of those rules of prudence and good sense,

without which mountaineering will inevitably be discredited in all impartial eyes. Excellent advice has been given almost *ad nauseam*, but it is not always followed, or even taken in good part. In this respect the younger guides are many of them the greatest sinners. To all climbers or guides we would say—Never cross a glacier without a rope properly used. Never climb alone, or with a single companion, above the snow-line. Treat every great mountain with the respect it deserves. Learn the art of mountaineering with trained companions before you attempt to practise it. Steadily avoid all places where stones or avalanches are likely to fall. Never climb in bad weather. Turn back resolutely before wind or storm. Avoid the casual guide. Ensure as far as may be personal fitness. Do nothing that can discredit the manliest of all pursuits, or bring down the ridicule of the undiscerning upon the noblest pastime in the world.

Accidents occasioned by the mistakes, the imprudence, or the folly of men are not the only ones that occur in the Alps. Tremendous catastrophes sometimes happen from the operation of the irresistible forces of nature. Every one has read of the great landslip at Goldau which took place in the first decade of the present century. Most people have heard of the bursting of the great lake at Mauvoisin in the Val de Bagnes, in the month of May, 1818, which caused great loss of life, and carried desolation as far as the old town of Martigny. Few have forgotten the great landslip in Canton Glarus which destroyed half a village, or the terrible fall of ice from the Altels in September, 1895, which killed six persons

and one hundred and fifty cattle, and laid waste the beautiful pastures of Spitalmatten. Such accidents are constantly occurring on a smaller scale, but the total destruction of the Baths of St. Gervais in 1892 by an avalanche of water, mud, and stones, which fell from the western side of Mont Blanc, and the great loss of life that ensued, forms one of the most tragic chapters in mountain history.

The traveller from Geneva still stops for a few minutes at the little village of Le Fayet while the diligences are got ready for Chamonix. A hundred yards from the railway station he sees on his right a quaint wooden building which forms the entrance to the well-known Baths of St. Gervais. Beyond the iron gates, a handsome drive, beautifully wooded, leads through a lovely garden to the establishment, which now stands in a delightful and shady spot at the mouth of a gorge through which runs the river of the Bon Nant. The Bon Nant is often swollen by floods, but so secure did the architects of the establishment feel, that part of their building was erected close to the riverside, while another portion was actually constructed partly over the river bed. The river, rising near the Col du Bonhomme, receives the greater part of the drainage which flows from the south-western flanks of the Mont Blanc chain, including that of the glaciers of Miage and Trélatête. At Bionay it receives a tributary which falls steeply from the Glacier de Bionnassay. This glacier flows from a mighty snow amphitheatre, above which soars the Aiguille of that name, together with the summits of

the Aiguille and Dôme du Goûter. North of the Bionnassay glacier is a smaller one called the glacier of Tête Rousse, well known to climbers of Mont Blanc from its western side. Adjoining, and a little below the Tête Rousse, is a stony tract known as the Désert de Pierre Ronde, and well worthy of its name.

Owing to the stoppage of the sub-glacial drainage, in some manner never precisely ascertained, a lake was formed under the Tête Rousse glacier, in which an enormous body of water was pent up at a spot ten thousand feet above the sea-level. Between one and two o'clock on the night of the twelfth of July, 1892, the ice that held up the lake gave way. The water swept in a torrent of tremendous force over the Désert de Pierre Ronde, gathering up thousands of tons of rock and stones in its course. It passed with a terrific roar under the hamlet of Bionnassay, which it did not injure, destroyed half the village of Bionay on the high-road between Contamines and St. Gervais, and tearing up trees by the roots as it went along, joined the main river of the Bon Nant; following its bed and destroying on its way the old Pont du Diable, it hurled its seething flood of water, timber, stones, and mud upon the solid buildings of the establishment and crushed them into fragments; then crossing the Chamonix road, it spread itself out in the form of a hideous fan over the valley of the Arve, destroying part of the village of Le Fayet on its way.

Such was the catastrophe of St. Gervais, which claimed more than a hundred and fifty victims, and which shows



The Site of the Ice Lake after the catastrophe.

[*To face page* 246.



The Ruins of the Baths of St. Gervais after the catastrophe.

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how little nature recks of human life. The calamity could not have been predicted or averted. A few weeks later I climbed to the glacier of Tête Rousse and was let down into the then empty lake ; then following the track of the avalanche, I walked along its whole course to the site of the Baths, and on to Le Fayet. Utter ruin was everywhere. The once lovely gardens were five or six feet deep in mud, fine trees had been snapped like reeds, and enormous blocks of stone were strewn over the dreary waste. I visited St. Gervais again in 1897. Man and nature had resumed their work. The Baths had been rebuilt in a safer spot; trees were springing from the soil ; lichen, moss, and the wild strawberry were growing upon the very stones which had caused such piteous devastation, and the gardens were again smiling and beautiful. "Nature repairs her ravages, but not all. The uptorn trees are not rooted again ; the parted hills are left scarred."

CHAPTER XII

THE CHAMONIX GUIDES

WHEN Chamonix was first visited there were apparently plenty of men who were competent to conduct a traveller to the Mer de Glace, and to the other glaciers which descended into the valley. "We took with us," says Windham, "several peasants—some to be our guides, and others to carry wine and provisions." Chamois-hunting and crystal-finding, then as later, gave their votaries greater opportunities than their neighbours enjoyed for acquiring an adequate knowledge of snow and glacier, so that such men were the best qualified to act as guides to adventurous travellers when their services should be required. None of them, however, were trained guides as we now understand the term ; the time for such a profession had not yet arrived. Jacques Balmat, Jean Michel Cachat, Marie Couttet, and others who accompanied Saussure and his successors in the earlier ascents of the mountain, must have been brave and competent men, but no one can judge of the real capacity of a guide with whom he has not worked, and in modern days the standard of excellence is far higher than was ever dreamt of in bygone times.

The Chamonix Guides

At the close of the last century and during the early years of the present one, visitors to the Valley of Chamonix were few and far between. After the peace of 1815 they were more frequent, some few desiring to ascend the great mountain, the majority only to explore the glaciers to which Windham and Martel had called attention. It then became customary for some of the Chamonix peasants, who were well acquainted with the mountains and who were willing to officiate as guides, to carry a small book about with them, in which travellers who engaged them entered their names, and sometimes gave certificates of the character and the ability of the persons they employed.

"Livret de service" was the name given to such books by French-speaking people. "Führerbuch" was the name used by the German-speaking Swiss when a generation later they also became guides. The early Chamonix "livrets" are of great interest as furnishing a record of visitors to the valley and of the excursions made, but very few of the latter were of any mountaineering importance. The Mer de Glace, the Glacier des Bossons, the Brévent and the Flégère, in rare cases the Jardin, were for the most part the limits of aspiration.

Jean Michel Balmat was a well-known guide in the beginning of the present century. His livret bears the date of 1814, and the last entry in it was made on the seventeenth of September, 1824.

A few extracts will suffice :—

"Mr. Glover, landscape painter, from London, has pleasure in recommending Jean Michel Balmat as an

excellent guide and he believes a worthy man. Sept. 25th, 1814." [1]

"Jean Michel Balmat attended us to see the Mer de Glace from Montanvert, and we were very well satisfied with his abilities and attention.—F. Barclay and A. Barclay, October 11th, 1814."

"Major Fausette and Major Cockburn, R.A., were attended by Jean Michel Balmat to the Mer de Glace and other glaciers, and to Martigny and Mont St. Bernard, and they can with truth say that he was a most excellent guide, very civil and attentive, and that his mules were uncommonly good and steady. July 20th, 1816."

"The bearer, Jean Michel Balmat, conducted Mr. P. Garland and Mr. Frederick Thruston to the Jardin from Chamonix in about eleven hours, Oct. 7, 1816, and they have every reason to be satisfied with his services and to think him a very careful and good guide."

"Jean Michel Balmat attended Mrs. Hill and her daughter and a large party on several excursions in the neighbourhood of Chamonix, particularly up La Montanvert and the Croix de Flégère, a still more arduous ascent; and found him a most intelligent man, attentive and very active. She is desirous of recommending him to the attention of those who are not very courageous, finding his manners all that is encouraging, and a steadiness which is indispensable in such arduous excur-

[1] Glover was an artist of considerable repute, and painted both in oil and water colours. Amongst his landscapes were pictures of Helvellyn and Ullswater. He died in 1849. It would be interesting if any of his Alpine works could be identified.

sions—another recommendation is the neatness of his person. Sept. 11th, 1819."

Here and there a more important expedition was recorded, in which Balmat gave equal satisfaction, for Count Matzewski writes on the fifth of August, 1818:—

"Jean Michel Balmat a été avec moi à l'Aiguille du Midi et au Mont Blanc. Je le recommande comme un guide trés bon, fort, et attentif."

Thus in the early days guides became known by the records of past services, and travellers were free to choose the men who seemed to have the highest qualifications. Unfortunately this free-trade method soon came to an end.

In the month of May, 1823, the organisation of the guides of Chamonix was undertaken by the Sardinian Government. They were formed into a Corporation by Royal Order, and a definite tariff for certain excursions was imposed. Further laws were promulgated in 1846 by Royal manifesto, the preamble of which was as follows:—

"The increasing number of travellers who come to visit the Valley of Chamonix has shown the need of further regulating the service of guides established by our manifesto of the month of May, 1823, and of modifications for securing the safety of travellers and for rendering their excursions easy and agreeable."

Additional rules were laid down in May, 1852. In the year 1846 the number of guides had been limited to sixty, but this limitation was now abolished. Every peasant domiciled at Chamonix was eligible to be placed

on the Guide-roll if he had the necessary qualifications, which were defined as "personal probity, combined with physical and intellectual aptitude." These qualifications were to be tested by examination. No traveller was bound to take a guide even for the most dangerous excursion ; but the days of climbing without guides had not begun, and the traveller was really forced to submit to the usual rules. When Savoy was ceded to France, the French Government continued to uphold the Society of guides on the existing lines. Theoretically the object of the guide system as established by the Sardinian Government and approved and amended by the Government of France, was to ensure the safety of travellers and to make their excursions "easy and agreeable." For this purpose security was to be taken for the competence of the guides. Let us see how it worked out. The examination was a mere farce, the rota was rigidly adhered to, and the traveller was also obliged to take as many guides as the Bureau in its wisdom might consider necessary for any particular expedition. Thus a trades' union of the worst form was established, and was perpetuated for many years. It seemed advantageous to the short-sighted natives, for it ensured the regular and systematic employment of most of the adult inhabitants ; but it was really ruinous. It was hateful to mountaineers, who, wanting competent guides for some important excursion, had to take the first men on the roll, good or bad. Hence they either avoided Chamonix, or brought foreign guides with them into the valley. It tended to lower the quality of the guides themselves, the

worst of whom might be cast for Mont Blanc, which possibly they had never climbed; whilst the best might have the bad luck to find no better employment than to accompany a mule to the Montanvert, or to carry a lady's shawl to the Brévent or the Flégère.

No encouragement was given to special capacity. Why should a man cultivate the manners or practise the arts by which alone a guide really becomes great, if he was to be no better off than the most incompetent man upon the roll? The tendency of the system was to produce a dead level of mediocrity. The result might easily have been foreseen. The names of the old guides who worked unfettered at the time of Saussure's ascent, and for thirty years afterwards, stand out in the history of Chamonix like peaks above the clouds. Their successors have sadly degenerated. It is a melancholy fact that of the three hundred men now on the Chamonix roll, those who could be relied upon in a grave emergency may be counted almost upon the fingers of one hand. Of course no regulations, however absurd, can altogether prevent real genius from being discovered. Auguste Balmat, Michel Croz, and Auguste Simond, among the dead, were men of exceptional ability, but would have taken a far higher position if they had possessed the freedom of their brethren of Meyringen and Grindelwald. François Dévouassoud, now retired, possesses all the qualities of a great guide, and was selected by Mr. Douglas Freshfield to accompany him in two journeys to the Caucasus, where he led in the first ascents of Kasbek, Elbruz, and Tetnuld. No man more chafed under the

restrictions imposed by the Chamonix system, from which he wholly separated himself more than twenty years ago. The effect of this estrangement on Dévouassoud's career was noteworthy. While there is hardly a group in the Alps, from the Col de Tenda to the Gross Glockner, where he has not climbed, his record of peaks is lowest in his own district, for the very good reason that his employers hesitated to subject him to the annoyance inflicted by the guide Bureau on those who did not recognise their rules. Michel and Alphonse Payot are men of real capacity and power, but no one who has climbed with them can be ignorant of their views as to the curse of the *rôle*. And there is one old guide still living at Chamonix whose opinion is entitled to still greater weight. This is the doyen of the Chamonix guides, Jean Payot, the father of Michel and Alphonse. He is ninety-three years of age, and forms a wonderful connecting link between the present and the past. He was well acquainted with Jacques Balmat, and was the leader of the expedition which went to try to recover his remains in the Valley of Sixt, in 1853. He led Mr. J. E. Cross to the summit of Mont Blanc in 1843, and Mr. Richards and Mr. Gretton in 1850. He watched the birth of the guide system in 1823, its various developments and its final abrogation as an institution supported by Government in 1892, and he fearlessly asserts that it has done infinite harm. For instance, the shortest way from Chamonix to the summit of Mont Blanc is by the "ancien passage." It has been seen how dangerous this route may be in certain conditions of weather and snow.









Jean Payot.

Michel Payot. François Devouassoud.

Melchior Anderegg.

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In settled weather, however, and with a north wind the route is perfectly safe. After the accident to Captain Arkwright's party in 1866 the Chamonix guide Bureau forbade the use of this route ; a foolish step, though possibly justified by the stupidity and ignorance of the bulk of the Chamonix guides. It is easier for incompetent guides to abandon a particular route altogether, than to take the trouble to acquaint themselves with the conditions under which it is safe or dangerous.

Strenuous efforts have been made at various times to procure a relaxation of the obnoxious regulations. One of the first official acts of the Alpine Club was to send a memorial to the Sardinian Government. In this document, dated in 1858, it was pointed out that under the laws of 1852 a party desirous of ascending Mont Blanc must take four guides for each traveller, and that when, in the year 1855, seven Englishmen well accustomed to the glaciers desired to make the ascent, they were forced to retain the services of twenty-eight guides. As the tariff for each guide was a hundred francs, and the travellers had to provide food and wine for the whole caravan, the cost of such an expedition would have been nearly four thousand francs. The absurdity of the regulation was admitted, and every member of the Club (which imposes upon its members an adequate mountaineering qualification) was made free to choose what guides he pleased and what number he pleased for any kind of expedition.

The Club returned to the charge in 1874, and presented a caustic and unanswerable memorial to the French

Government. They pointed out the gradual and increasing deterioration in the body of Chamonix guides; they showed that though the glaciers of Mont Blanc were better known than any other Alpine region and offered no special difficulties or dangers, yet during the few preceding years they had been the scene of five fatal accidents involving the loss of nineteen lives. They urged that the spot of all others endeared to lovers of the Alps by natural attractions and traditional associations was being gradually abandoned; and they stated that the condition of affairs was prejudicial alike to the safety and comfort of travellers in general, and to the true interests of the inhabitants. They suggested that the chief guide should be an independent person appointed during pleasure by the Préfet of the district; that an unrestricted choice of guides should be allowed to all classes of travellers; that the system of admission to the Society of Guides should be altered; that a list of guides with their respective qualifications should be printed annually and sold to the public, and that the tariff should be modified in several particulars.

The memorial was received with favour by the then Préfet of Haute Savoie. He withdrew from the guides the right of nominating their own head; he suggested several reforms, and particularly that where a traveller expressed no preference in the choice of a guide, it should be the duty of the Bureau to recommend men who were most fitted for the expedition proposed. The Préfet encountered great local opposition, but considerable improvements resulted from the memorial; the

main point gained being, that at least for a time,[1] any traveller was free to choose his own guides. This concession was hampered by the monstrous regulation that every guide and porter should pay to the Society out of his earnings five per cent. on ordinary expeditions, and fifteen per cent. on extraordinary ones; in other words, that the most competent guides should contribute to the support of the most lazy and incompetent men upon the roll.

These regulations, notwithstanding the improvements, still appeared to climbers to be "a compromise between the selfish instincts of the baser part of the population and the checks and suggestions of a fussy officialism." But they were soon altered for the worse. The absolute right of a traveller to choose his own guide was again limited, and a free choice was given only to the following persons: 1. Scientific explorers. 2. Persons not speaking French and desiring a guide who could speak their own language. 3. Persons desirous of having a guide they had previously employed. 4. Persons making perilous ascents. 5. Members of any Alpine Club. 6. Ladies travelling alone. These rules were foolish and incoherent. If the idea was to give freedom of choice to real mountaineers, it was ridiculous to give it to the members of every Alpine Club, for nearly all such clubs, except the English one, have (very reasonably from their point of view) no qualification whatever. Consequently the restriction fell chiefly on English and Americans. But the fatal defect was that no attempt was made to give

[1] "The Alpine Journal," vol. ix. p. 308.

travellers reasonable security by ensuring the fitness of the guides upon the roll. Hence climbers avoided the Chamoniards, and brought more than ever into Chamonix the men of Meyringen and Grindelwald, of Saas and the Val Tournanche. The great rock Aiguilles of the chain were almost all climbed for the first time under the leadership of foreign guides. The men of Chamonix had deliberately thrown away their opportunities and they had only themselves to blame. Some, indeed, of the "baser sort" endeavoured to prevent the access of foreigners to their valley. All such attempts miserably failed. Against the power of genuine ability all jealousy was impotent. The hotel-keepers, a very important element in the population, had the most obvious interest in Chamonix being frequented, and foreign guides were made welcome by all but the guide Bureau, even by the better and more enlightened of the guides themselves.

In 1889 the French Government desired to allow other persons than mere inhabitants of the Commune of Chamonix to join the Guide-roll, and this proposition caused intense excitement and alarm. Angry recriminations took place between the Bureau des Guides and the Préfet of Haute Savoie, and ultimately on the thirtieth of December, 1892, the Société des Guides de Chamonix was abolished. The Society protested, but in vain. They affirmed that the action was illegal; that it was not really due to the Government, but to a Préfet "mal inspiré"; that it was contrary to the interests of Chamonix and of the guides, porters, and mule owners; that it was

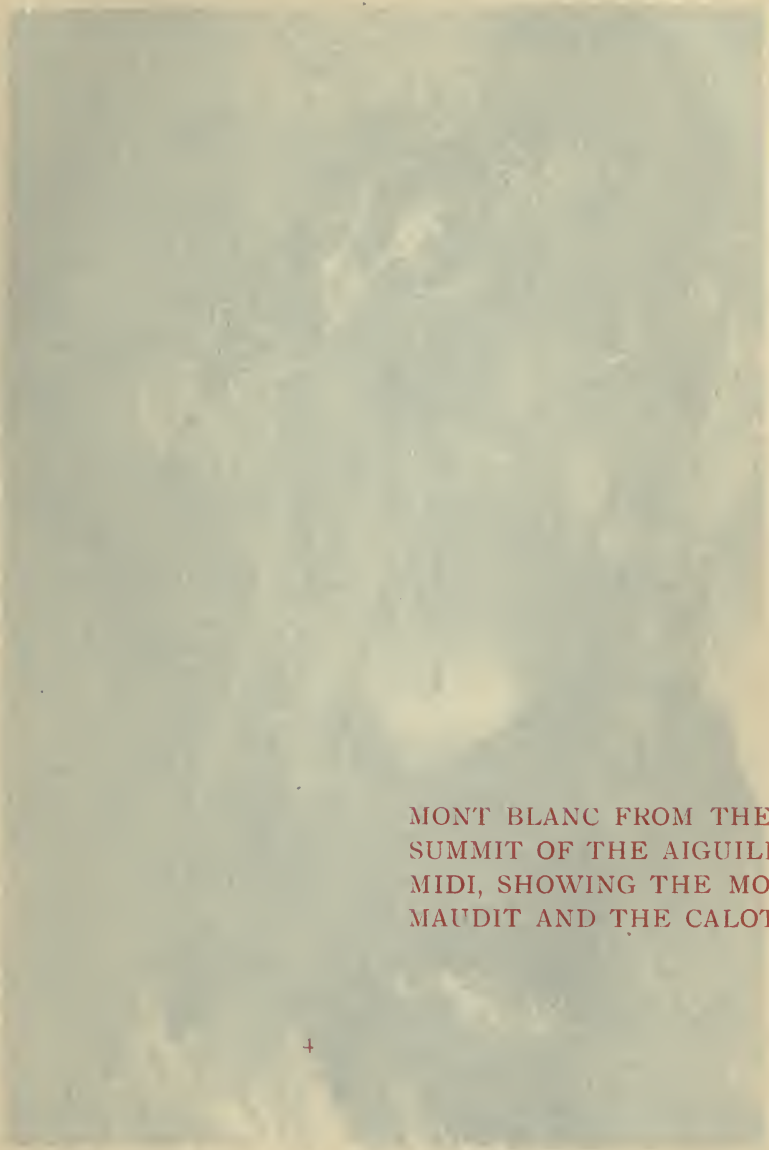
detrimental to travellers and even to France. They complained bitterly that the Government which had struck a cruel blow at the unfortunate valley by its "brutal abolition" of the Society of Guides, at the same time desired to construct a railway to the Montanvert—the effect of which would be to render mules useless, to diminish the opportunities of the guides, and to involve Chamonix in ruin. The Préfet, however, remained firm. He was clearly of opinion that one of the first duties of any Government is to let its people alone, and so the Society as a Corporation under Government control ceased to exist after a lifetime of seventy years.

Travellers would appear to have borne the suppression of the Society with resignation if not with equanimity. It was theoretically a good thing that the French Government ceased to give official sanction to a thoroughly bad system. Practically, however, it has made little difference. The men of Chamonix were free to organise themselves, and they have done so, though their syndicate does not possess the coercive power of the old Society, since those who do not belong to it cannot be prevented from acting as guides.

New laws have been adopted which include almost everything that was objectionable under the old *régime*. Only persons domiciled in the Commune are eligible to serve; no real provision is made to secure the fitness or capacity of the members; they choose their own president and officers; they make their own regulations, and impose their own exorbitant tariff. The six exceptions to the rule that the traveller may not choose his own

guides are still allowed, but the guides are at liberty to refuse any engagement when chosen out of turn. The ablest men must still make the most trivial expeditions or lose their turn upon the roll. Free choice of guides, other than in excepted cases, is forbidden. The old habits and the old traditions have proved too strong.

It is not to be assumed that Chamonix is incapable of producing guides of high order ; we have sufficient evidence to the contrary. But in other districts where they are really free, their knowledge and capacity have enormously increased. Climbers have had the benefit of the services not only of men of such supreme excellence as Almer and Anderegg and Rey, and many of the younger generation whose names it would be invidious to mention, but also of a rank and file of a steadily improving quality. It is, of course, right that every centre of mountaineering should have its official list of guides from which a man may be excluded for misconduct, but, beyond that, most regulations are injurious, if not oppressive. It is a grave misfortune for Chamonix to have been the site of an experiment which, in practice, has so miserably failed, and it is an equal misfortune for the climbing world to have lost the services of the better men, whom Chamonix, under a more rational system, would doubtless have produced.



MONT BLANC FROM THE SUMMIT OF THE AIGUILLE DU MIDI, SHOWING THE MONT MAUDIT AND THE CALOTTE.



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CHAPTER XIII

THE SUBJECTION OF MONT BLANC—HUTS, REFUGES, AND OBSERVATORIES

IT has already been stated that practically no person can be admitted into the Alpine Club without an adequate mountaineering qualification. The standard at first was not a high one, but in recent years it has been steadily raised. The result has been that notwithstanding the great growth of mountaineering, the numbers of the English Society have been far less than those of Continental societies having similar objects.

The English Club has only about six hundred members. The members of the French, German, Swiss and Italian Clubs are numbered by thousands. The consequence has been that while the English Society has never had more funds at its disposal than are necessary for its ordinary administration, the other clubs, which impose no qualification upon their members, generally, if not always, had large funds at their command. How were such funds to be applied? Other European societies, containing great numbers of persons not really mountaineers, have naturally more interest than ourselves in making mountaineering easy.

Climbing, however fascinating, is very laborious. Was there no way in which undue fatigue could be avoided, and climbing made easy to the modern mountaineer? Supposing that huts could be constructed about the level of the snow-line, and that such huts could be supplied with the necessary cooking apparatus, with blankets, possibly even with beds; to what better purpose could surplus funds be devoted? The idea was favourably received, and in these later days huts have been erected all over the Alps by which the ascent of the great mountains has been enormously facilitated. The older generation of climbers would probably have preferred the old ways. There was a charm in the night bivouac by the glacier, and in the camp fire under the lonely crags; there was a sense of freedom in lying out in the open in the moonlight, or under the multitudinous stars, for the loss of which the modern hut is but a poor consolation. On the other hand it must be admitted, that the new system enables many persons to attain summits which otherwise would be inaccessible to them, and makes it feasible to start in doubtful weather at the mere cost of returning if the weather grows worse. Again, huts form a valuable refuge when anything goes wrong, in cases of injury or illness, or when a violent storm overtakes a descending party. Doubtless to lie out on a mountain side, often in wet or in cold, is not the best preliminary for a successful expedition; and so the era of huts and refuges set in.

Saussure, it will be remembered, had a cabin constructed on the rocks of the Grands Mulets in 1786, but

it was too small, and falling into disuse ultimately disappeared. M. le Pileur records that he saw the ruins of it so late as 1844. The Chamonix guides soon recognised that the ascent of the mountain would be made easier and more attractive by the construction of a suitable refuge at the Grands Mulets. Accordingly they had a wooden building put together, and piece by piece carried up to its intended position. It was erected on a little platform on the summit of the rocks in the year 1853, and for thirteen years men passed the night there previous to an ascent of the mountain. It was very rough, being furnished only with a stove, a table, a bench, and sometimes hay and straw enough for sleeping purposes. A careful drawing of this hut was made by Mr. Adams Reilly in the year 1862 and is reproduced in this volume. This was the first refuge, other than that of Saussure, ever erected on the mountain. Many men who dreaded passing a night upon the open rocks were now provided with an adequate shelter, and the subjection of Mont Blanc began.

Ascents from the side of St. Gervais were not numerous, but the guides of that village became anxious about the superior facilities offered to climbers from the Chamonix side. The new hut on the Grands Mulets afforded a sleeping place at a height of about 10,000 feet above the sea-level. The St. Gervais men proceeded to construct a hut on the summit of the Aiguille du Goûter at a height of 13,000 feet, and not more than five hours' walking from the summit of Mont Blanc. This refuge was erected under the superintendence of Frédéric Mollard, a well-

known guide of St. Gervais, in the autumn of 1856.[1] Though it was completely rebuilt in 1882, it is still a wretched place. It is generally half full of ice or snow, but is still used by climbers of the mountain from the western side.

But to return to Chamonix: In the year 1866 there was a well-known guide of that village called Sylvain Couttet. He was the proprietor of the little inn at the Pierre Pointue some three hours above Chamonix. The well-known Venance Payot was then Mayor of the village, and the two determined to supersede the hut which had been used for thirteen years, and to erect "a Pavilion" in its place which should be under the control of the proprietor of the inn at the Pierre Pointue. Both this inn, which was enlarged and improved, and the intended pavilion or "hotellerie," were let to Sylvain Couttet for a term of years. The new building, also constructed of wood, was put together at Chamonix; the materials were carried up in 1866, and greatly improved accommodation was afforded to travellers when the new refuge was opened in the following year. There was a small dining-room, two bedrooms furnished with camp bedsteads, and a little kitchen with an excellent stove. At first there was no permanent resident, but when travellers set out for the Grands Mulets they necessarily passed the inn at the Pierre Pointue, and porters were sent thence with fire-wood, blankets and

[1] M. Durier and Mr. Coolidge say that this cabin was built in 1858, but this cannot be accurate, as it is well known that Mr. Bradshaw Smith and Mr. B. St. John Mathews slept in it in July and August, 1857. See Coleman's "Scenes from the Snow Fields," p. 34.



The Hut on the Aiguille du Goûter.



The First Hut on the Grands Mulets.

[*To face page* 264.

provisions. Couttet enlarged the refuge by building a sleeping place for guides ; he improved the beds, and ultimately appointed a resident attendant who was in occupation from the first of July till the end of September in each year. For six years, however, the attendant was annually changed, as she was found unable to bear the rigours of the situation for more than one season. At length, in 1878, one Marie Tairraz was discovered, who was mistress of the establishment for eleven successive seasons, and who was not only capable of bearing the isolation and the cold, but ministered to the comfort of travellers and guides with a quickness and a good-humour which will long be remembered. Thus the ascent of the mountain was made easy. Travellers had no longer to carry blankets, food, or fuel with them to the Grands Mulets. The new refuge was regularly supplied from the Pierre Pointue, and climbers of Mont Blanc could rely upon a good meal and a fair bed on the eve of an intended expedition.

As visitors to the Grands Mulets increased, the new building was found inadequate. The occupation of Sylvain Couttet terminated in 1880, and the Commune of Chamonix took that opportunity of enlarging and improving the little inn. The platform on which the old one was erected was not capable of enlargement, so a new one was constructed and a second inn was built upon it and opened in 1881. Instead of two bedrooms, there were now four, each containing two beds, and the kitchen was considerably improved. The building was of stone instead of wood, the tariff was somewhat reduced,

but was then, and is still excessive. As the years rolled on, the new and improved inn became also inadequate. A fresh one was constructed in 1896 and opened in the following year. It contains eight bedrooms furnished with excellent beds, and has a large and commodious kitchen, the guides being accommodated in the old hostelry. Improvements have been so continuous and so rapid that it is impossible to predict what further developments may be in store for the Grands Mulets, but the advantages now afforded will probably amply suffice for many years to come.

The Chamonix way to the summit is the easiest and therefore the most popular of the various routes up Mont Blanc; at least twenty ascents are made by way of the Grands Mulets, to one that is made by any other route. It is only natural, therefore, that the most popular route should command the best accommodation. Some of the other routes, however, have not been wholly neglected. At present there is no refuge either on the Brenva route or on the Brouillard route, and climbers who make the ascent in these directions have still to camp out in the open.

On the Rochers du Mont Blanc route two huts have been constructed by the Italian Alpine Club. One of these was built in 1875 at a height of 10,194 feet, but has now fallen into disuse. The other, known as the "Quintino Sella hut," was constructed ten years later, at a height exceeding 11,000 feet, and is now used by the few persons who undertake that magnificent expedition. The popular route from Courmayeur is by the Dôme glacier and the

Aiguilles Grises. At the foot of the latter an admirable hut was built in 1891, which affords excellent accommodation to the ever-increasing number of travellers who ascend Mont Blanc from this direction. On the western route, men though still sometimes sleeping in the hut on the Aiguille du Goûter, more frequently prefer the little refuge at its foot, and it is now in contemplation to build not a refuge, but an inn like that on the Grands Mulets, on the right bank of the Bionnassay glacier, near the Tête Rousse.

On the eastern side it is not the custom to sleep on the Col du Géant, which is too far distant from the summit of the mountain ; although there is an excellent cabin on the Col itself, and a new and efficient "hotellerie" is being constructed just below the Col on the Italian side. Climbers of Mont Blanc from the east, that is by way of the Mont Blanc de Tacul and the Mont Maudit, will always prefer the hut under the Aiguille du Midi—a refuge which has recently been much improved. Of the seven different routes, therefore, the accommodation on one (from Chamonix) is more than enough ; on two others there is no refuge at all, and on the remaining four the sleeping arrangements are sufficient to meet the requirements of any reasonable mountaineer. The ascent of Mont Blanc from all sides except Chamonix is still arduous enough, but the comforts and conveniences on the Chamonix route are such as to bring the mountain within reach of persons of very moderate capacity. In the old days the traveller, after leaving the Pierre Pointue, bade adieu for a time to the habitable world. All food

and fuel had to be carried with him. What is the case now? The climb from the valley to the summit involves about fourteen hours of actual walking—the time varying, of course, in accordance with the capacity of the climber and the conditions of weather and snow. Three hours from Chamonix is the Pierre Pointue, where rest and refreshment can be obtained. Four hours further are the Grands Mulets, where the climber may obtain a dinner and a bed. After a night's rest, five hours' more walking brings him to the Vallot refuge, where he may rest again and regain, if necessary, his exhausted faculties; and in two hours more he may reach the summit, where he will now also find a place of shelter. Truly the mountain has been brought into subjection, at least on the Chamonix side.

It is manifest that these various refuges greatly facilitate the ascent of the mountain, but, on the other hand, they are not without their dangers. Men too often think that they can get from one to another under conditions of weather when no prudent person would be on the mountain at all. If in the year 1892 there had been no refuge on the Vallot rocks, Mr. Nettleship's party would not have dreamt of leaving the hut on the Aiguille du Goûter in the face of a storm about to burst upon them; and a valuable life would have been saved.

In the year 1888 M. J. Vallot, a well-known lover of Mont Blanc and a gentleman of considerable scientific attainments, pointed out the advisability of constructing a refuge at a height of 14,000 feet. He urged that many attempted ascents resulted in failure owing to fatigue, to

passing too rapidly into a rarefied air, to want of sufficient food and rest, and other causes. If, he said, a suitable refuge could be constructed at a great height, strong men could rest for a time with pleasure, and weak men could sleep there, could get habituated to low pressures, and could be enabled to ascend Mont Blanc from such an eyrie in a couple of hours.

M. Vallot at first desired to build an observatory only, but the Commune of Chamonix declined to accord him this privilege unless he at the same time constructed a refuge that might be useful to travellers. This course was agreed to. An admirable site was chosen at the foot of the Bosses du Dromadaire, where some rocks crop out in the snowy ridge connecting the Bosses with the Dôme. It was clear that a good foundation could be obtained for the proposed building, which was constructed at Chamonix in the spring of 1890. It was carried up in pieces by a host of guides and porters, and was erected on a good rock bed in the month of July in that year. Part of it was intended for the refuge, and the remainder was to be used for scientific purposes. Some time later M. Vallot built another refuge for public use, also on good rocks at a short distance from the observatory, of which he then took exclusive possession. Few persons ascend the mountain from Chamonix without halting at the refuge, which sometimes proves to be the limit of the traveller's endurance, but which in most cases enables him to rest and refit, and to pass on to the summit.

No reasonable person can find any fault with the Vallot observatory. It cannot be seen from Chamonix. It

affords a comfortable shelter. Its owner often spends several consecutive weeks there. He watches his valuable scientific instruments and carries on his observations with sufficient comfort, though sometimes in intense cold, as warmth can only be obtained by burning petroleum.

Some results of M. Vallot's observations are already communicated to the public.[1] He is now building a house outside the village which will be in direct communication—by signal—with the observatory, which is about to be removed to a more commodious site at a short distance from the present one. Scientific men expect a good deal from M. Vallot's researches, and they are not likely to be disappointed. His work is difficult and laborious, involving great physical strain and constant self-denial. He has shown unvarying courtesy to English climbers and scientific investigators, and every one heartily wishes him success in his undertaking.

As soon as the Vallot observatory was completed it was visited by another distinguished man of science, M. Janssen, who was not only a prominent member of the French Academy of Sciences, but the director of the well-known observatory of Meudon. He, too, wanted a pure atmosphere for scientific observation, and was of opinion that if an observatory could be constructed on the actual summit of Mont Blanc, it would be of the highest importance for astronomy, physics, and meteorology. The necessary funds were soon forthcoming, though the prevalent opinion, both scientific and general,

[1] "Annales de l'observatoire météorologique du Mont Blanc," J. Vallot, Paris, 1893–1898.

was antagonistic to his scheme. Consent was given by the Commune, but again on the condition that another refuge should be provided for the public, which was ultimately erected on the summit of the Rochers Rouges.

The services of M. Eiffel were retained, together with those of Herr X. Imfeld, the well-known Swiss engineer. The one thing needed was a rock base. Unfortunately no such base was found possible on the summit of Mont Blanc, and after great expense had been incurred in tunnelling, and great suffering to individual guides and porters, the idea of the rock base was unwillingly abandoned. Herr Imfeld admitted that he had worked without hope, and that in his opinion the cost and the risk were out of all proportion to any practical results that were likely to be obtained.

Workmen had been engaged during the months of August and September, 1891, under the leadership of Frédéric Payot, and they used M. Vallot's observatory as a base of operations. But they suffered severely from storms and cold; some were badly frost-bitten, some were disabled from mountain sickness, some deserted, and one person, Dr. Jacottet of Chamonix, who served as a volunteer, was seized with delirium under M. Vallot's roof and died there. Dr. Janssen, however, never lost heart, and determined to place the observatory upon the snow. A temporary or pioneer structure of wood about six feet high was placed in a hole on the summit, half being above the snow and half below it. In the course of two years this trial structure sunk so much that it almost disappeared, and grave doubts arose as to whether

any building constructed upon the summit would not inevitably sink with the snow. Dr. Janssen would not admit the possibility of failure. He completed a structure at Meudon, and sent it to Chamonix, whence the bulk of it was carried to a spot above the Rochers Rouges in the summer of 1892. In the following year the remainder of the building was dragged up. It was not completed until 1894, and the various scientific instruments were hauled up and placed in position in 1895. No one doubts the ability, the courage, and the perseverance of Dr. Janssen. But is the game worth the candle? If it be desirable to know the extreme amount of cold that prevails upon Mont Blanc, surely a maximum and minimum thermometer placed on or near the summit would be sufficient for that purpose. What researches in astronomy or meteorology are likely to be made? An observatory is, or ought to be, a place where some one can observe. Observations, to be of any real use, must be constant and continuous. How can this be the case on a spot where the temperature is now known to have fallen as low as forty-five degrees below zero of Fahrenheit?[1]

The subject must be considered from the point of view not of the scientific observer only, but of the lover of nature. Here is a noble summit, once of spotless snow, on which a building has been erected which can only be described as horrible and heartrending. Dr. Janssen himself told the Academy of Sciences "that there must be some degree of uncertainty about the result."

[1] Whymper's "Guide to Chamonix and Mont Blanc," page 78.



The Janssen Observatory.



The Vallot Observatory and Refuge.

[*To face page* 272.





The Initials of Jacques Balmat found on the Grands Mulets Rocks.—
Jq B. 1786.

[*To face page* 272.

Huts, Refuges, and Observatories

If any permanent good could be reasonably anticipated, if any fairy tale of science could ever emanate from it, the hideous abortion might be borne with patience, though with a sad heart. But it would appear that any prospect of scientific discovery is an idle dream. The so-called observatory is on the move; the inevitable downward tendency of the glacier of which the summit is composed makes stability impossible; the self-registering instruments have ceased to register.

Meantime the mountaineer is deprived of the mighty panorama which he has enjoyed for more than a century, and is forced to crawl round the building and seek in instalments his once unrestricted view. Surely it is time that, in the interests of insulted Nature, some protest should be made against the arbitrary encroachments of misdirected science.

NOTE.—When the site of the last "hotellerie" at the Grands Mulets was fixed upon, a rock was found bearing the initials of Jacques Balmat, and the date 1786. The portion of the rock on which the initials were carved was carefully removed, and is now in the Mairie at Chamonix.

CHAPTER XIV

GLEANINGS AND REFLECTIONS

IN perusing the accounts of the earlier ascents of Mont Blanc, every one must be struck with the sufferings which the unfortunate pioneers endured. All of them complained bitterly. They were frostbitten, they were blinded, they were horribly blistered, they could not breathe the rarefied air. Some of them were urgent in their advice that no one should follow their example. Sherwill advised none of his friends to undertake such a journey. He says: "It is in itself a dangerous effort. The risk of losing one's own life or that of the guides is too great to be incurred without a very important object." Sir Charles Fellows was still more emphatic. He says that "great as is the pleasure of overcoming an acknowledged succession of dangers, any one who sets the least value upon his own life, or upon theirs who must accompany him on such an expedition, hazards a risk which upon calm consideration he ought not to venture; and if it ever falls to my lot to dissuade a friend from attempting what we have gone through, I shall consider that I have saved his life."

In these days men climb the mountain as a matter of course, and frostbite and blindness and other forms of suffering are, if proper precautions are taken, almost unknown. How is this? The dangers are the same as in the time of Saussure, or Sherwill, or Sir Charles Fellows. The real reason is that we know more than our fathers. It is with mountains as with other problems; to be successful we must know what we have to do and do it.

Beyond all question, too, the mental factor must be largely taken into account. The early travellers on Mont Blanc all had a very vivid impression of the dangers of the mountain. From the start they believed that they were undertaking an expedition of great peril, one in which it required exceptional powers to succeed, and in which it was no discredit to fail. Men in such a frame of mind lose the sense of proportion. Fatigue is assumed to be utter exhaustion, quickened respiration to be impending suffocation, and the difficult and arduous to be absolutely impossible. It is not that the pioneers were less courageous or possessed of less "grit" than the men of to-day. The very reverse is the real truth. It is so easy to follow where others have led; and only mountaineers can fully appreciate the immense difference between a first and a second ascent.

Paccard and Balmat were unaware that to face fresh snow for many hours in daylight with uncovered eyes, causes serious inflammation, resulting in partial blindness which may often last for many days. Early travellers took long to understand that the skin will peel from the face in gruesome blisters if unprotected from the Alpine

glare. The lessons which had already been learnt in the sixteenth century by the peasants of Canton Valais do not seem to have been communicated to Savoy. Men have now learnt that if the eyes are carefully shaded with dark spectacles neither sun nor snow will do them any harm. Any form of grease will protect the skin, and in these days the youngest climber would not fail to be provided with the necessary specific. In old times frostbite attacked hands and feet with a contemptuous impartiality, but Mr. Woodley could have set all cold at defiance, as men for the most part do now, by the use of suitable coverings for the feet and hands. Proper clothing is of vital importance. The climber of Mont Blanc may experience in the course of a single day almost incredible alternations of heat and cold. Some years ago the author registered in the month of August, at the Vallot hut, a temperature of four degrees below zero (Fahrenheit)—thirty-six degrees of frost—at seven o'clock in the morning, and the tea and wine he carried with him were frozen solid. Five hours later the heat was so great that he descended the mountain in his shirt-sleeves. The pioneers could not or would not appreciate this condition of things. Colonel Beaufoy records: "My dress was a white flannel jacket without any shirt beneath, and white linen trousers without drawers." No wonder that he suffered. A man does not explore the Arctic regions in pyjamas. Good and well-chosen food is also absolutely necessary. The "strange flesh" of the Alps is often uneatable, and as a rule is indigestible. At great heights the appetite is apt to be delicate, and requires kindly consideration. A

tender "poulet," with wholesome bread, and plenty of butter and honey, chocolate, and, above all, tinned fruits, will generally suffice for the most laborious excursion. It is easy to understand the intolerable thirst of which the older mountaineers complained, since they endeavoured to assuage it with vinegar, or small doses of sour wine. The modern climber, if well provided with cold tea, and with a judiciously iced mixture of sound red wine, seltzer water, lemons and sugar, will never suffer from undue thirst.

Again, almost all the early climbers waxed eloquent about the rarefaction of the air, and complaints were bitter and continuous as to the baneful effects of low atmospheric pressures upon the human organisation. The observations of the last few years have thrown a good deal of light upon this still vexed question. It was once thought that at a certain height (never distinctly ascertained) it would be altogether impossible to breathe. Saussure himself and others have described the effect of low pressures upon the human body, at a height of nine or ten thousand feet. But in old days when men failed from any cause, from want of sleep, or proper food or clothing, from imperfect digestion, or from insufficient training, they spoke vaguely of the rarity of the air as the cause of all their misfortunes.

It is, of course, beyond doubt that the air on the summit of Mont Blanc is very different from what it is at the sea-level, or in the Valley of Chamonix. M. J. Vallot estimates that the quantity of oxygen is diminished by about one-half. I may perhaps be allowed to relate

a rather singular personal experience. On one of the twelve occasions on which I have been on the summit of the mountain our party consisted of eight persons. The sky was quite cloudless, and the air absolutely calm and still. We all remained in a state of perfect enjoyment for nearly three hours. At the end of that time, and within the space of two or three minutes, seven out of the eight were attacked by headache and nausea, and the symptoms continued till the lower level of the Grand Plateau was gained. That men are sometimes subject to considerable discomfort owing to low pressures, even on such a height as Mont Blanc, is quite clear, and it has been remarked that this discomfort is far more common when the air is still, than when it is stirring. Ascents, however, in other ranges in recent years have proved that men when reasonably "habituated" can breathe with freedom at much greater heights, even up to 23,000 feet and more. Mr. Bryce tells us that he suffered a little from what he thought to be the effect of low pressures at the height of 13,000 feet on Mount Ararat, but far less at 17,000 feet, when he reached the summit. Herr von Thielmann tells us that on the top of Popocatapetl, 17,880 feet, he was entirely free from all the unpleasant effects wont to be ascribed to the rarity of the atmosphere; and that on Cotopaxi, 19,600 feet, none of the climbers showed any signs of exhaustion, and the appetite of all was excellent. In climbing Chimborazo, 20,545 feet, Mr. Whymper, it is true, suffered on his first ascent, though quite possibly from other causes; but six months later, after having trained himself amongst the great peaks of the Ecuadorian

Andes, he climbed it a second time, and experienced no inconvenience whatever.

Sir Martin Conway attained a height of 23,000 feet on the Pioneer Peak in the Karakoram Himalayas, and although "his heart was in a parlous state, his breathing apparatus was working well enough." He had clearly "not come to the end of his tether." Mr. Vines and the guide Zurbriggen suffered to some extent, but not seriously, in their ascents of Aconcagua, probably the highest point of the earth's surface which has yet been attained.

There are some who assert that the indisposition experienced by climbers is the effect of low pressures; others that it is attributable to the deficiency of oxygen in the air,[1] and that all difficulty may be surmounted by inhaling oxygen at great heights; but practical climbers know that such a course would be impossible on the mountain-side. The whole subject is really very complex and has at present been insufficiently investigated, but the following points appear to be already established beyond reasonable doubt.

First, that mountain-sickness—to use an accepted but inaccurate term—as experienced by travellers on such heights as Mont Blanc, is in the great majority of cases not due solely to low atmospheric pressure. Secondly, that the first climbers to reach heights of from 23,000 to 24,000 feet above the level of the sea, have been able to

[1] NOTE.—M. Paul Bert is the chief exponent of one view ("La Pression Barométrique," Paris, 1878). The subject is dealt with by Mr. Clinton T. Dent in an admirable manner in the *Nineteenth Century* magazine for October, 1892.

move and have their being without more difficulty than the early climbers experienced on Mont Blanc; and thirdly, that it is by no means impossible that men may hereafter find means and prove capable of climbing the highest mountains in the world. The questions involved are of great interest both from a scientific and a mountaineering point of view, but their consideration is outside the limits contemplated by this volume.[1]

Many of the earlier ascents of Mont Blanc, and particularly since the establishment of the Chamonix guide system, involved a heavy and wholly unnecessary expenditure. Fifty years ago in all centres, other than Chamonix, there was no guide system at all. Men obtained the services of the local chamois hunter, who was glad enough to accept a payment of seven or eight francs a day for showing the way up peaks or passes, the present tariff for which may be forty or fifty francs. At Chamonix the creation of the guide system meant the extraction of the maximum of money from the pocket of the mountaineer.

Saussure, according to Dr. Paccard, paid his guides only six francs a day. Some of the early climbers paid no more than fifty or sixty francs to each guide for the ascent of Mont Blanc, but when climbers increased, the tariff became enormous. First men were advised to

[1] NOTE.—Those who are interested in the subject may be referred to Professor Angelo Mosso's "Fisiologia dell' Uomo sulle Alpi" (Milan, 1897), an English translation of which is just published. The book is not a dry scientific treatise, but written in popular form. I question, however, whether the views expressed by Professor Mosso are likely to be generally accepted by men of science

take mules as far as the Pierre Pointue. Then they were informed that each traveller must have four guides at a cost of one hundred francs apiece. Then an inordinate supply of provisions was laid in, and it became necessary to hire a host of porters to deal with the commissariat. Then a successful ascent was celebrated by the discharge of cannon, and the cost of much gunpowder was included in the bill; and finally, for a payment of five francs, a certificate was granted by the Bureau des Guides, as the only real evidence of success. The ascent of Albert Smith and his friends cost nearly 2,400 francs.

Up to the year 1865 every successful climber, on his return from the summit, met with an ovation in the village. The proprietor of the hotel from which he started provided him with an enormous bouquet, and copious libations were placed freely at the command of all the members of his party. As ascents became more numerous this custom died out. At present the only survival of the old system consists in the firing of cannon to celebrate the traveller's return; a custom which in the interests of the peace and quietness of visitors who are not mountaineers, would be more honoured in the breach than in the observance.

Everybody climbs Mont Blanc now. Familiarity has bred for it, not indeed contempt, but at least indifference. Men have climbed it without guides; women have climbed it; blind men have climbed it; a priest has said Mass upon its summit; it has been scaled in the depth of winter; Professor Tyndall slept upon the top,

though not without much suffering; M. Vallot spent three days and nights there. Many a great feat has been achieved upon it; Mr. Frederick Morshead once climbed it alone, and went up and down in less than seventeen hours; but after all, the better it is known, the more it is appreciated, and the greater seems to be its subtle and indefinable charm.

Let it never be forgotten that in order to ensure perfect enjoyment and a due capacity for appreciation, the first requisite is bodily fitness. How few of the early explorers, or indeed of modern climbers, have been capable of taking this lesson to heart. A man finds himself at Chamonix or at Courmayeur, and around him the air is always seething with Alpine enterprise. He is ambitious; he too will share in the raptures of the mountaineer. So he starts for the arduous excursion, without experience, without training, and without knowledge. He may succeed, or he may fail; but if he succeed, success is too often devoid of joy. He will be able to say that he has ascended Mont Blanc; but what then—many foolish people have done as much before. It may be unhesitatingly affirmed that two out of three persons who make this ascent have no real delight in it. Some are dragged up like logs, are sick at heart before they get halfway, and wish they were dead long before the summit is attained. They have not served an apprenticeship to their business. They suffer both at the time and afterwards; over-exertion causes mental paralysis, and genuine appreciation of mountain beauty becomes impossible. To the spirit

hampered by jaded limbs or a disordered stomach, the sublimities of nature appeal in vain. When will men learn that it is impossible to go to the Alps direct from the pulpit, or the bar, or the desk, or the other sedentary occupations of life, and walk continuously for sixteen or eighteen, or it may be for twenty hours, without insulting nature, who is certain to take her revenge. But the mountaineer who loves nature for her own sake, works on wholly different lines. He knows what a great mountain has to teach him, and he prepares himself to receive the lesson with a sympathetic and a reverent heart. He trains his body and keeps open his mind. Undue bodily fatigue is unknown to him, and therefore he always possesses the maximum capacity of appreciation. To him every tree, or fern, or flower has its tale to tell; to him the jagged rocks reveal their own history; to him the glory of the sunlight on the eternal snows, and the "silence that is in the starry sky" alike bring happiness and peace.

My story is now told. In these days men go further afield.

> "All experience is an arch where thro'
> Gleams that untravelled world, whose margin fades
> For ever and for ever when I move."

They make expeditions involving weeks or months of labour and of toil. They talk, doubtless justly enough, of the beauties of Kasbek and Dykhtau. They look down into the crater of Cotopaxi, and sweep the horizon

from Chimborazo. They have brought under subjection Pioneer Peak and Illimani, Aconcagua and Tupungato. The world is now well known, and since modern geographical discovery must necessarily tend in the direction of mountain exploration, who shall blame them if their thoughts are turned to the mightiest of the world's pinnacles in Sikkim or Nepal.

I envy the pioneers of the future. "Other men are young now, but we no more." But the old school will never think any mountain so interesting or so beautiful as Mont Blanc. Tourists can never spoil it. Huts can never wholly vulgarise it. "Age cannot wither nor custom stale its infinite variety." The tracks of summer are obliterated by the snows of winter, and each new man, each new generation of men, will find in it, as we have found, the same interest and the same charm.

The men of old time used to say that no one could climb Parnassus without becoming either a poet or mad. It was indeed asserted forty years ago in a well-known guide-book, that most of those who had hitherto ascended Mont Blanc had been persons of unsound mind. It is true that if a man is capable of poetic feeling at all, the study of the great mountains will encourage and develop it; and the madness, after all, has not been without method.

Mountaineering has its lights and shades, but it is a pursuit which has added greatly and permanently to the sum of human happiness. Who shall measure the amount? Who is there who can sleep on a glacier in the moonlight, or by the camp fire amongst the lonely

hills; who can listen to the music of the wind against the crags, or of the water falling far below; who can traverse the vast white solitudes in the night time under the silent stars; who can watch the rose of dawn in the east, or the great peaks flushed with carmine at sunset, without thoughts which it seems almost sacrilege to put into words, without memories which can never be effaced, for they sink into the soul!

Mont Blanc has now been known to five successive generations. Men may come and go, but its mighty summit "abides untroubled by the coming and going of the world." And to those who know it well and love it dearly, come often, in quiet hours, teeming thoughts which swarm like bees; sunny memories of successful endeavour, of transcendent beauty, and of priceless friendships, which have added health, and sweetness, and happiness to life.

THE GEOLOGY OF MONT BLANC

BY PROFESSOR T. G. BONNEY, D.SC. LL.D. F.R.S.

THE geological structure of the Mont Blanc range is comparatively simple, though first impressions are likely to be misleading. If a section were drawn such as could be examined in crossing from Chamonix to Courmayeur by the Col du Géant it would exhibit the following succession :[1]—About the former village, gravel and alluvial deposits cover in many places the bed of the valley; but on both sides here and there, and especially on the lower slopes north of the Glacier de Bois, a dark, slaty rock is exposed which is referred by geologists to the Jurassic system, and supposed to be contemporaneous with the middle and lower oolites of Britain. This rock forms all the slopes leading up to the Col de Balme, and extends into the valley of the Trient. Just opposite to the end of the Glacier d'Argentière, and on the north side of the valley, another sedimentary rock appears, itself often dark in colour, and sometimes a slate, which runs for a time along the western side of the Jurassic mass, and

[1] See figure p. 294.

then is continued along the line of the lower valley of the Trient to that of the Rhone near Vernayaz. This, which can be easily examined from the high-road, at the well-known Tête Noire, or almost anywhere below Salvan, is a member of the Carboniferous system.

Ascending the slopes towards the Montanvert, we find these formed of fairly hard mica schists, or rather fine-grained mica gneisses, which on the right bank of the Glacier de Bois seem to overlie the Jurassic rocks already mentioned, and extend along the lower slopes of the Aiguilles, as far as the eye can reach. This group, before we reach the Montanvert itself is succeeded by another of rather harder, less micaceous gneisses,[1] which also extend towards the north-east, forming a band of varying breadth, from which the craggy shoulders of the Aiguilles have been carved. To this succeeds, as we ascend, a huge mass of coarse gneissoid or granitoid rock which has long borne the name of protogine. Of this rock, the peaks of the great Aiguilles, and the actual summit, with the southern precipices and pinnacles, of Mont Blanc itself are composed.

Protogine continues, after we have crossed the water-shed, down the steep slopes on the southern face of the range, until we approach the Mont Fréty, when we again find a black slaty rock. This, on examination is found to make its appearance nearly opposite to the end of the Glacier de Fresnay, on the right bank of the valley, but the belt expands at the foot of the Brenva Glacier so as to

[1] The distinction between the two groups of rocks is not very well marked, and is not, so far as I have been able to form an opinion, an important one.

occupy the lower slopes of the Val Ferret on both sides, until it passes away in a north-north-east direction over the well-known Col of the same name. South of the trough occupied by the Vals Ferret and Veni, the mountains for the most part are formed of a group of calcareous and micaceous schists, but there are one or two intercalations of other rocks, some newer, others probably older. But to enter into the structural details of this region would occupy too much space and is unnecessary for our present purpose.

We see then that the protogine occupies a very elongated oval or vesica-shaped area in the central and eastern parts of the Mont Blanc range; that it is flanked on the western side, possibly also on the eastern, by a gneiss;[1] and this again by rocks which may be designated collectively mica schists,[2] the latter seeming gradually to take the place of the former as they approach the peak of Mont Blanc itself, so that the mica schists form all the ridge of the Dôme du Goûter and rise, on the western side, almost up to the summit. In fact the protogine is represented on the geological map of the Swiss Survey as ending rather abruptly, and the whole range from one side to the other, all about the Aiguille du Miage, du Glacier, etc., is coloured as mica schist. This rock passes out of the Mont Blanc district towards the south-west as a long zone[3]

[1] A thin zone of gneiss is seen flanking the Jurassic rocks at La Saxe, north of Courmayeur.

[2] There are also two or three small masses of dioritic or serpentinous rock which are intrusive in the gneiss and schists; veins of a fine-grained granite also occur not unfrequently, somewhat resembling the masses at the Cascade Berard.

[3] Gneiss, however, and even granite enter into the composition of this zone, though, at any rate for a time, mica schist seems to dominate.

which extends into Dauphiné, though a strip of Jurassic rock on the Col du Bonhomme and to the north of it may be regarded as a limitation; it also crosses the Arve near the end of the Glacier des Bossons (not, however, without a slight interruption from the Jurassic rock), but does not extend far to the north. The craggy range on this side of the valley, from the Brévent to beyond the Aiguilles Rouges, with one remarkable exception, to be noticed directly, is composed of gneiss, generally similar to that of the Montanvert.

We have said that the geological structure of this range is misleading, if first impressions be blindly followed, and for this reason. The Jurassic rocks in the Valley of Chamonix appear to dip on the northern side at a high angle below the gneiss, and on the southern in the same way under the mica schist. Again, on the latter side, the mica schist seems to pass beneath the gneiss, and the gneiss itself beneath the protogine, the angle of inclination in the apparent bedding gradually becoming steeper, till in the more central part of the range it is actually vertical. When the watershed has been crossed the angle of dip appears to diminish gradually in descending, but its direction now is northwards instead of southwards; and when the Jurassic slates are reached, they, as in the other valley, seemingly plunge beneath the crystalline rocks. Thus our first impulse would be to regard the Jurassic as the oldest member of the section—a thing which a little consideration shows to be impossible, for on the supposition that the whole series consists of stratified rocks, beds comparatively unaltered could not,

on any rational theory of metamorphism, underlie those which were highly altered. It was soon perceived that in reality the slaty rocks of Jurassic age in the valleys on either side of the Mont Blanc range were newer than the rest, being the lowest parts of two folds which have been preserved by being nipped in between the crystalline masses. The section then received this interpretation. The protogine, gneiss and mica schists—the whole crystalline group—were supposed to represent a series of very ancient stratified rocks which at some remote and unknown date had been rendered crystalline by the action of heat, water, and pressure. At a much later time, and after considerable disturbance and denudation, representatives of the Carboniferous system had been deposited upon them. Another pause followed, marked by more disturbance and denudation. Then came the great subsidence in the Alpine region. This, indeed, began in the Trias, but it did not produce its effects in some parts till about the age of the Lias. It continued till the end of the Eocene, when the crust of the earth was affected by the first of the two great sets of movements which gave birth to the Alps. Then all the rocks, both the older crystalline and the sedimentaries deposited upon them, were bent into great parallel folds, rising arches alternating with sinking troughs. As the crests of the former were forced up, the newer and softer rocks were worn away and removed by the various agents of denudation, until finally their remnants were preserved only in the beds of valleys, while the more durable crystallines towered above them in the mountain peaks. So intense

had been the folding that it had bent the coarsest of the crystalline masses (the protogine) back to back in the very heart of the range, and the inward dip of the newer strata on either side had been produced by the gradual "heeling over" of the masses towards the flanks of the fold; this last movement being not improbably due to further compression of the region during the time when the valleys were actually being excavated. This arrangement of beds is called Fan structure, because they resemble the sticks in an open fan. We cannot of course actually prove that the crystalline rocks, which now form the principal part of the Mont Blanc *massif*, were once wholly buried beneath the Secondary and earlier Tertiary deposits,[1] but a study of the geology of the surrounding region renders this highly probable, and the general correctness of the statement made above is established by the following significant fact:—The range immediately north of the Chamonix valley, as has been already said, consists in almost every part of crystalline rocks, but on its highest point, the topmost peak of the Aiguilles Rouges, we find still remaining a fragment of sedimentary rock, from fifty to sixty feet thick, which consists of a thin representative of the Trias covered by some Lias.

But of late years important modifications have been made in one part of the above explanation. Formerly it was supposed that mica schists, and even gneiss, however coarse, were rocks originally stratified, which had been

[1] Professor Favre estimates the thickness of the sedimentaries as not less than 4,100 feet ("Recherches Géologiques . . . voisines du Mont Blanc," § 486).

subsequently altered. That is true of many schists, including some of the mica schists ; it may also be true of some gneisses, but now it is generally agreed that the bulk of the latter are directly or indirectly of igneous origin. In some the parallel ordering of the constituents was caused by movements while the mass was cooling. Many of them are granites in which a foliated structure has been produced by pressure, followed by certain rather slight mineral changes. Even some of the mica schists prove to have been formed in this way, though after a much more thorough crushing. Thus the foliation and apparent bedding in the crystalline rocks of the Mont Blanc range is a structure analogous to the cleavage of a slate among sedimentaries, and thus has been subsequently produced. Hence as most of them are igneous in origin, we cannot determine the relative age of their members by the apparent succession ; we can only say that the crystallines as a whole are very much older than the Triassic and even than the Carboniferous strata. The so-called protogine has been altogether unlucky in its history. The earlier geologists defined it as consisting essentially of quartz, felspar and talc. While perhaps it would be rash to say that the last-named mineral never occurs, it is certain that the ordinary constituent is simply a variety of mica. In other words the minerals of the protogine are identical with those of granite, but as is common in that rock, one at least of them has become more or less altered by taking up water. The structure also, which is often more or less porphyritic, is that of a granite, allowing for the effects of pressure in rounding

the corners of the larger crystals and producing a slight foliation.

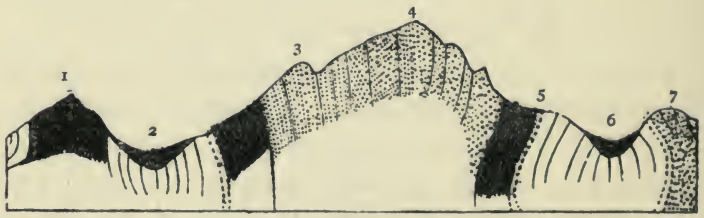
Besides this, the name protogine ("first produced") is unfortunate. It was given because this was supposed to be the most ancient rock in the whole *massif*; instead of that it can be proved to be intrusive in the gneiss,[1] whatever the origin of the latter may have been. As to this or indeed that of the mica schists of the district, we cannot, in the present state of our knowledge, say much. Some of these schists may have once been sediments and be later in age than the gneisses. Certainly that is true of a great group of schists which occur south of the Val de Ferret and in many other parts of the Alps, but I am not sure that these occur in the range of Mont Blanc itself.

The making of the existing range, as already said, is principally due to two great sets of movements, the one at the end of the Eocene, the other closing the Miocene. The latter, I believe, acted with its greatest intensity in the central and western Alps and in the northern part of them. A study of the river system of these regions has led me to the conclusion that the Bernese Oberland and the Mont Blanc *massif* owe their present eminence to this second movement. If so, there was a time when Mont Blanc, though a mountain, was not the monarch; it is a re-

[1] Favre, "Recherches Géologiques . . . voisines du Mont Blanc," § 538. Mr. J. Eccles, F.G.S., informs me that good examples of intrusion may be seen near the north border of the Glacier Rond at the base of the Aiguille du Midi, at the base also of the Aiguilles du Plan, de Blaitière, and du Charmoz; also in a gully descending nearly north from the north-west spur of the Aiguille du Tour. In addition the relations of the protogine and gneiss may be seen on both sides of the Mer de Glace, but here the rocks are not so well exposed.

presentative of the newer rather than of the older dynasty.[1]

We may pass over the history of the sculpture of the peaks and passes of the range, for it is similar to that of any other great mountain chain, such differences as may exist being merely varietal. The forces of nature for almost countless years have never ceased to "draw down Æonian hills" and to scatter the *débris* from the mountains far and wide over the lowlands. The *massif* of Mont Blanc also affords ample evidence that at a time, geologically speaking, almost recent, the glaciers were on a vastly grander scale than they are at the present day; yet there can be little doubt that even then many of the Aiguilles and rocky crests rose far above the snows which swathed the less prominent crags and the lower slopes. But for this matter also a bare mention is sufficient, for the same story may be told of every other district in the Alps.



1. Brévent. 2. Valley of the Arve. 3. Aiguille du Midi. 4. Mont Blanc. 5. Mont Frety. 6. Val Veni. 7. Mont Chetif.

Dark horizontal shading: alluvium of the two valleys.
Wide-spaced lines: jurassic (chiefly).
Dark vertical shading: mica schist and gneiss.
Dotted parts: protogine and coarse crystallines.

[1] For a discussion of this question see "Alpine Journal," vol. xiv. pp. 111–117.

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NOTE.—This bibliography has, with a few additions, been taken by permission from that published by M. Louis Kurz, in the French edition of his "Guide to the Chain of Mont Blanc."

APPENDIX

TABLE OF THE VARIOUS ASCENTS OF MONT BLANC FROM PACCARD AND BALMAT TO ALBERT SMITH AND OTHERS, 1786 TO 1851, IN ORDER OF DATE

Number of Ascent.	Name.	Date.
1	Michel Gabriel Paccard Jacques Balmat	1786. August 8
2	Jacques Balmat Jean Michel Cachat Alexis Tournier	1787. July 5
3	Horace Bénédict de Saussure	1787. August 3
4	Colonel Mark Beaufoy	1787. August 9
5	Mr. Woodley	1788. August 5
6	M. Doorthesen M. Forneret	1802. August 11
7	Maria Paradis	1809. July 14
8	M. Rodatz	1812. September 10
9	Count Matzewski	1818. August 4
10	Dr. William Howard Jeremiah van Rensselaer	1819. July 12
11	Captain J. Undrell, R.N.	1819. August 11
12	Frederick Clissold	1822. August 19
13	H. H. Jackson	1823. September 4
14	Dr. Edmund Clark Captain Markham Sherwill	1825. August 26
15	William Hawes Charles Fellows	1827. July 25

Appendix

Number of Ascent.	Name.	Date.
16	John Auldjo	1827. August 9
17	The Hon. E. Bootle Wilbraham	1830. August 3
18	Dr. Martin Barry	1834. September 17
19	Count Henri de Tilly	1834. October 9
20	Alfred Waddington	1836. July 10
21	Henry Martin Atkins Samuel Pidwel M. Hedrengen	1837. August 23
22	M. Doulat	1837. August 26
23	Henriette d'Angeville M. Eisenkramer Count Karol de Stoppen	1838. September 4
24	Il Marchese di Sant' Angelo	1840. August 27
25	The Chevalier Jacques Carelli de Rocca Castello	1843. August 16
26	M. Chenal M. Ordinaire	1843. August 26
27	Mr. Nicholson The Abbé Caux	1843. August 31
28	W. Bosworth Ed. Cross M. Blanc	1843. September 4
29	M. Jacot	1843. September 10
30	M. Bravais M. Martins M. le Pileur	1844. August 29
31	Count Fernand de Bouillé	1846. July 14
32	J. Woolley J. T. Hurt	1846. August 5
33	Archibald Vincent Smith	1847. August 11
34	S. A. Richards W. K. Gretton	1850. August 29
35	J. D. Gardner	1850. September 3
36	Erasmus Galton	1850. September 6
37	Albert Smith The Hon. W. E. Sackville West C. G. Floyd F. Philips G. N. Vansittart	1851. August 13

Appendix

TABLE OF FATALITIES WHICH HAVE OCCURRED ON MONT BLANC, IN ORDER OF DATE

Date.	Travellers.	Guides.	Remarks.
1820. Aug. 20	.....	Pierre Carrier ..... Pierre Balmat ..... Auguste Tairraz ...	Avalanche. Party unroped
1820. Aug. 15	J. M. Rochester F. Vavassour ... B. Fuller	Frédéric Tairraz	Slip on snow. Party improperly roped
1864. Aug. 9	.....	Ambroise Couttet...	Fall in crevasse, unroped
1866. Aug. 23	B. Young	.....	Slip on snow ; no guides
1866. Oct. 13	Capt. Arkwright	Michel Simond..... François Tournier Joseph Tournier ...	Avalanche ; bad guiding
1870. Aug. 2	Mrs. G. Marke ...	Olivier Gay	Fall in crevasse unroped
1870. Sept. 6	Mr. Randall ..... Mr. McCorkindale Mr. Beane	Jean Balmat ..... Joseph Breton ..... Edouard Simond... Auguste Couttet ... Auguste Cachat ... Ferdinand Tairraz Alphonse Balmat... Johann Graf	Climbing in bad weather. Bad guiding
1873. Sept. 14	Prof. Fedchenko	.....	Exposure ; incompetence of guides
1874. Aug. 31	J. A. G. Marshall	Johann Fischer.....	Fall in schrund ; midnight
1882. July 19	Prof. Balfour	Johann Petrus	Slip on rocks. Two persons only in expedition
1885. Aug. 1	Mario Rey	.....	Two persons only ; no guides
1890. Aug. 12	.....	Gratien Brunod ...	Slip on rocks, unroped
1890. Aug. 19	Count di Villanova	J. J. Maquignaz ... A. Castagneri ..... Two porters	Climbing in bad weather
1891. Aug. 21	Herr Rothe.....	Michel Simond.....	Bad weather, bad guiding, bad roping
1892. Aug. 25	R. L. Nettleship...	.....	Climbing in bad weather
1893. Aug. 27	Signor Poggi	.....	Falling stone
1893. Sept.	Signor Cumani ...	.....	Climbing alone
1895. Aug. 18	R. Schnürdreher	Michel Savoie ..... Laurent Brun	Slip on ice ; bad guiding
1898. July 14	— Reigel	.....	Climbing alone

Appendix

TRANSLATION OF A LETTER WRITTEN BY JACQUES BALMAT TO THE CHEVALIER A. DE LA PLACE AND PUBLISHED IN THE *JOURNAL DE SAVOIE* ON THE 30TH OF SEPTEMBER, 1825.

"CHAMONIX, 31*st August*, 1825.

"SIR,—I take the liberty of writing to you to tell you that a large number of travellers have come to visit the Montanvert, the Jardin, the Mont Bréven, and La Flégère. Two Englishmen reached the top of Mont Blanc on the 26th at 2.45 p.m. They were only able to remain eighteen minutes on the summit and were unable to see the panorama of mountains, the summits and the valleys being hidden by clouds. These gentlemen were Captain Markham Sherwill and Dr. Edmund Clark of London. They were led by seven guides. They experienced much difficulty in climbing the great slopes near the summit on account of the snow, which was very soft in places and very hard in others. It was necessary to cut steps in the ice crust with axes, and this rendered the ascent of the last slopes very difficult. These gentlemen had great difficulty in overcoming the rarification of the air which exists in the higher regions.

"Meanwhile I remain

"Your very devoted Servant,

"JACQUES BALMAT,

"dit Mont Blanc."

NOTE.—This letter was written by Balmat at the age of sixty-three, and is copied in Paccard's manuscript volume.

TRANSLATION OF A LETTER WRITTEN BY ANGELIQUE PARADIS TO MADEMOISELLE D'ANGEVILLE, ON THE 3RD OF SEPTEMBER, 1846.

"A Mademoiselle d'Angeville.

"MADEMOISELLE,—Every one in our valley speaks in the highest terms of your goodness towards the unfortunate, but the experience of it which my mother-in-law (your predecessor on the summit of Mont Blanc) has had, shows that all that has been said falls short of the reality.

Appendix

"Notwithstanding the great kindness which characterises you, and the unexampled generosity you have been pleased to show to my dear mother and to me, I should not have dared to raise my eyes in petition to you, had not dire necessity compelled me to do so.

"During a short space of time I have had to deplore the loss of my dear mother-in-law. I have seen a portion of my little property ravaged by a tremendous flood. I hardly escaped being crushed under the ruins of my poor abode. Now I am alone with an aged aunt and a sick child. I have been destitute for some time, having nothing to hope for except the charity of my neighbours. In this wretched condition I venture to raise my hands in supplication to you, whom I justly regard in the light of a new Providence. Excuse, Mademoiselle, the boldness and the perfect confidence with which I take the liberty of expressing to you my needs. Condescend, Mademoiselle, to receive with favour my humble petition, and believe in the respect and in the everlasting gratitude of the humblest and most unworthy of your servants.

"ANGELIQUE PARADIS.

"From the house of my mother-in-law,
"Madame Françoise Paradis,
"*September* 3, 1846."

—*From the collection of M. Bastard, of Geneva.*

An ACCOUNT of the

GLACIERES

OR

ICE ALPS

IN

SAVOY,

In TWO LETTERS,

One from an

Engliſh Gentleman to his Friend at *Geneva*;

The other from

PETER MARTEL, Engineer,
to the ſaid *Engliſh* Gntleman.

Illuſtrated with a MAP, and two Views of the PLACE, &c.

As laid before the ROYAL SOCIETY.

LONDON,
Printed for PETER MARTEL,
And Sold by *W. Meadows* in *Cornhill*; *P. Vaillant* in the *Strand*; *G. Hawkins* between the *Two Temple Gates*; *R. Dodſley* in *Pall Mall*; *J. Pallaret* againſt *Catherine Street* in the *Strand*; and *M. Cooper* in *Paſter Noſter Row*. MDCCXLIV.
(Price One Shilling and Six-pence.)

A LETTER *from an* Engliſh *Gentleman to Mr.* Arlaud, *a celebrated Painter at* Geneva, *giving an Account of a Journey to the* Glacieres, *or* Ice Alps *in* Savoy, *written in the Year* 1741. *Tranſlated from the* French.

SIR,

ACCORDING to your Deſire I ſend you an Account of our Journey to the *Glacieres*. I ſhall give it you in the plaineſt Manner, without endeavouring to embelliſh it by any florid Deſcriptions, although the Beauty and Variety of the Situations and Proſpects that we obſerved in this unfrequented Part of the World, would well deſerve to be deſcribed by one, who, like you, join to ſo great a Skill in Painting ſo lively and poetical an Imagination; but theſe not being my Talents, I will, as I ſaid before, confine myſelf to the giving you a faithful Relation of the Incidents of our Journey, and acquainting you with the Obſervations we made. I ſhall add a few Hints, which may be uſeful to ſuch as ſhall hereafter have the ſame Curioſity that we had, and who may perhaps have Advantages and Conveniences which we had not to make more accurate Obſervations. It is really Pity that ſo great a Curioſity, and which lies ſo near you, ſhould be ſo little known; for though *Scheuchzer*, in his *Iter Alpinum*, deſcribes the *Glacieres* that are in the Canton of *Berne*, yet they ſeem to me by his Deſcription to be very different from thoſe in *Savoy*.

I had long had a great Deſire to make this Excurſion, but the Difficulty of getting Company had made me defer it: Luckily in the Month of *June* laſt * Dr. *Pococke* arrived at *Geneva* from his Voyages into the *Levant* and *Egypt*, which Countries he had viſited with great Exactneſs. I mentioned to him this Curioſity, and my Deſire to ſee it, and he who was far from fearing Hardſhips, expreſſing a like Inclination, we immediately agreed to go there; when ſome others of our Friends found a Party was made, they likewiſe came into it, and I was commiſſioned to provide what was neceſſary for our ſetting out.

* The ſame who has lately publiſhed ſo accurate and ingenious an Account of his Travels.

As we were aſſured on all hands, that we ſhould ſcarcely find any of the Neceſſaries of Life in thoſe Parts, we took with us Sumpter Horſes, loaded with Proviſions, and a Tent, which was of ſome uſe to us, though the terrible Deſcription People had given us of the Country was much exaggerated. I had provided ſeveral Mathematical Inſtruments to take Heights, and make Obſervations with, hoping that Mr. *Williamſon*, an able Mathematician, Governor to Lord *Hadinton*, would have been of the Party; but he declining it, on account of the Fatigue which he fear'd he ſhould not be able to ſupport, I choſe not to take the Trouble of carrying them, there being no Perſon in the Company ſo capable as he of making a proper uſe of them.

We ſet out from *Geneva* the 19th of *June*, N. S. we were * Eight in Company, beſides five Servants, all of us well arm'd, and our Baggage-Horſes attending us, ſo that we had very much the Air of a Caravan. The firſt Day we went no farther than *Bonneville*, a Town about four Leagues diſtant from *Geneva*, according to the way of reckoning there; theſe four Leagues took us more than ſix Hours riding. This Place is ſituated at the Foot of the *Maule*, and cloſe by the River *Arve*; 'tis ſurrounded with beautiful Meadows and high Mountains, covered with Trees, which form all together a very delightful Situation. There is a very good Stone-Bridge near the Town, but it had ſuffered in the late Innundation of the *Arve*, which had carried away part of it. Our Inn was a tolerable one for *Savoy* as to every thing but Beds.

The next Day being the 20th, we ſet out very early in the Morning, and paſſed the *Arve*; our Road lay between that River and the Mountains, all along which we were entertained with an agreeable Variety of fine Landſkips. They reckon two Leagues from *Bonneville* to *Cluſe*, but we were three Hours and an half in going it.

Cluſe is ſituated in a narrow Paſs between the Mountains, which almoſt meet in this Place [leaving only room for the *Arve*, which is thus hemm'd in for above a League together.] Before you come to *Cluſe* there is a kind of Hermitage, upon a Rock on the Right Hand, where we climb'd up in order to enjoy the Proſpect, which is *delicious*; after that we paſſed the *Arve* over a fine Stone Bridge, of one very large Arch, and continued our Journey for about an Hour and an half through a narrow Road, along the *Arve*, between Rocks

* Viz. Lord *Hadinton*, the Honourable | *Aldworth*, *Pococke*, *Price*, *Windham*, and Mr. *Baillie* his Brother, and Meſſ. *Chetwynd*, | *Stilling fleet*.

of

of a prodigious Height, which look'd as if they had been ſplit on purpoſe to give the River a Paſſage. Not to mention the Beauty of the Views all along, we were extremely entertained by continual Echoes, and the prodigious rattling, cauſed by cracking a Whip, or firing a Piſtol, which we repeated ſeveral Times. We ſaw Caſcades on every Side, which fell from the Top of high Rocks into the *Arve*. There is one among the reſt of ſingular Beauty, it is called the *Nan d'Arpena*, 'tis a great Torrent, which falls from a very high Rock; all the Company agreed it muſt be higher than * *Saleve*. As for my Part, I will not pretend to decide about it, I however may venture to ſay, that the Caſcade of *Terni* does not fall from near ſo great a Height; but then the Quantity of Water, when we ſaw it, was much leſs than at this laſt mentioned Place; tho' the People of the Country aſſured us, that at certain times the Water is much more abundant than it was then.

After about three Hours riding from *Cluſe*, we came to Saint *Martin*'s Bridge, right againſt *Salanches*, which is on the other Side of the *Arve*. We did not care to go out of our Way into the Town; but choſe rather to encamp in a fine Meadow near the Bridge, in order to refreſh ourſelves. From thence we ſet out again on our Journey, and after four Hours riding through very bad Ways, being obliged to croſs ſome dangerous Torrents, we arrived at a little Village called *Servoz*. Our Horſes ſuffered here very much, being tied to Pickets all Night in the open Air for want of Stabling; beſides, there was neither Oats, nor any other Forrage, but Graſs freſh cut; as for ourſelves, as we had brought all Neceſſaries along with us, we were well enough off, except as to Beds, and that want was ſupplied by clean Straw in a Barn.

From thence we ſet forward at break of Day, and paſſed the *Arve* once more over a very bad wooden Bridge, and after having clim'd over a ſteep Mountain, where we had no ſmall Difficulty with our Horſes, their Shoes coming off continually, and they often running the riſque of tumbling into the *Arve*, which run at the Bottom of the Rock, we came into a pleaſant Valley, where we paſs'd the *Arve* a fourth time over a Stone Bridge, and then firſt had a View of the *Glacieres*. We continued our Journey on to *Chamouny*, which is a Village upon the North-ſide of the *Arve*, in a Valley, where there is a Priory belonging to the Chapter of *Salanches*; here we encamp'd, and while our Dinner

* *Saleve* is a Mountain, about three Miles from *Geneva*, whoſe perpendicular Height is about 1150 *French* Feet.

was preparing, we inquired of the People of the Place about the *Glacieres*. They ſhewed us at firſt the Ends of them which reach into the Valley, and were to be ſeen from the Village; theſe appear'd only like white Rocks, or rather like immenſe Icicles, made by Water running down the Mountain. This did not ſatisfy our Curioſity, and we thought we were come too far to be contented with ſo ſmall a Matter; we therefore ſtrictly inquired of the Peaſants whether we could not by going up the Mountain diſcover ſomething more worth our Notice. They told us we might, but the greateſt Part of them repreſented the Thing as very difficult and laborious; they told us no-body ever went there but thoſe whoſe Buſineſs it was to ſearch for Cryſtal, or to ſhoot * *Bouquetins* and *Chamois*, and that all the Travellers, who had been to the *Glacieres* hitherto, had been ſatisfied with what we had already ſeen.

* The *Bouquetins* are Animals much larger, and leſs Shaggy than a Goat; for their Figure, ſee *Plate* 4. Let. *a*. They live in the higheſt Mountains, and come down very rarely; for which reaſon the Trouble and Danger of Hunting them is very great; they are very courageous, making uſe of their great Horns for Defence, when attack'd; they are very cunning, and by the Wind ſmell the Hunter a vaſt way off; when chaſed, they leap an incredible Diſtance, and being purſued cloſely will throw themſelves down high Precipices, and by falling upon their Horns break their Fall ſo as not to hurt themſelves. The Edges of their Hoofs, or Claws, are ſo ſharp and hard, that the Impreſſion of them may be ſeen on Stones. Their Blood is eſteemed as a ſovereign Remedy in Pleuritick Diſorders, which is reckoned to be owing to the Herbs they feed on in theſe Mountains, particularly an Herb called, in the Language of the Country, *Genepi*. *Chamois* is a Kind of Goat, only ſtronger; for their Figure, ſee *Plate* 4. Let. *b*. They keep on the high Mountains of the *Alps*; they are very fond of licking certain Rocks, of a kind of ſoft crumbling Stone, which is Salt, and in thoſe Places the Hunters go to look for them, and ſurpriſe them, which is however very difficult, for they always have ſome of the Herd ſtanding on high Rocks as Centries, and when they perceive any Danger they give the Alarm by a Noiſe they make, upon which the reſt betake themſelves to the Precipices, where it is impoſſible to follow them. Sometimes this kind of Sport becomes dangerous, not only by reaſon of the craggy Rocks one muſt climb up to, but becauſe it often happens that the Hunter purſues the *Chamois* into ſome narrow Paſs, where there is but juſt Foot hold for one Perſon, having on one ſide a ſteep Rock above him, and beneath a frightful Precipice; the *Chamois* then having no way to eſcape is obliged to turn upon the Hunter, and endeavours either to jump over him, or elſe ſqueeſe between him and the Rock, in which caſe he puſhes the Man down the Precipice; ſo that all he has to do is either to lay down, or elſe, by ſtruggling, make good his Place, and thruſt the Beaſt down the Rock. It is with their Horns that the little Reed-canes Ladies carry are generally tipt, and of their Skins is made the true Shammy Leather.

The

The Prior of the Place was a good old Man, who ſhewed us many Civilities, and endeavoured alſo to diſſuade us; there were others who repreſented the Thing as mighty eaſy; but we perceived plainly, that they expected, that after we had bargain'd with them to be our Guides, we ſhould ſoon tire, and that they ſhould earn their Money with little Trouble. However our Curioſity got the better of theſe Diſcouragements, and relying on our Strength and Reſolution, we determined to attempt climbing the Mountain. We took with us ſeveral Peaſants, ſome to be our Guides, and others to carry Wine and Proviſions. Theſe People were ſo much perſuaded that we ſhould never be able to go through with our Taſk, that they took with them Candles and Inſtruments to ſtrike Fire, in caſe we ſhould be overcome with Fatigue, and be obliged to ſpend the Night on the Mountain. In order to prevent thoſe among us who were the moſt in wind, from fatiguing the reſt, by puſhing on too faſt, we made the following Rules: That no one ſhould go out of his Rank; That he who led the way ſhould go a ſlow and even Pace; That who ever found himſelf fatigued, or out of Breath, might call for a Halt; And laſtly, that when ever we found a Spring we ſhould drink ſome of our Wine, mixed with Water, and fill up the Bottles, we had emptied, with Water, to ſerve us at other Halts where we ſhould find none. Theſe Precautions were ſo uſeful to us, that, perhaps, had we not obſerved them, the Peaſants would not have been deceived in their Conjectures.

We ſet out about Noon, the 22d of *June*, and croſſed the *Arve* over a wooden Bridge. Moſt Maps place the *Glacieres* on the ſame Side with *Chamoigny*, but this is a Miſtake. We were quickly at the Foot of the Mountain, and began to aſcend by a very ſteep Path through a Wood of Firs and Larche Trees. We made many Halts to refreſh ourſelves, and take breath, but we kept on at a good Rate. After we had paſſed the Wood, we came to a kind of Meadow, full of large Stones, and Pieces of Rocks, that were broke off, and fallen down from the Mountain; the Aſcent was ſo ſteep that we were obliged ſometimes to cling to them with our Hands, and make uſe of Sticks, with ſharp Irons at the End, to ſupport ourſelves. Our Road lay ſlant Ways, and we had ſeveral Places to croſs where the * *Avalanches* of Snow were fallen,

* *Avalanche.* To explain the meaning of this Word, I believe it will not be unentertaining to the Reader to cite ſome Paſſages from the *Delices de la Suiſſe*, which contain ſome curious Particulars relating to thoſe mountainous Parts of the World.

and

and had made terrible Havock; there was nothing to be ſeen but

" Beſides theſe Ice Mountains, the " Snows are extremely dangerous to " Travellers. There often fall from theſe " high Mountains immenſe Balls of " Snow, which are called in *German La-* " *winen*, in *Italian Lavine*, in *French* " *Avalanches*, which by the Impetuoſity " of their Fall make a Noiſe like a Clap " of Thunder; ſo that thoſe that are at a " Diſtance imagine it to be really ſo, as " I remember it happened to myſelf " ſome Years ſince, having heard one " that fell in the *Vallais*, though I was " above twenty Leagues diſtant from it. " Sometimes it is cauſed by the new fal- " len Snow, which being driven by the " Violence of the Wind, forms vaſt " Snowballs, which gather by rolling, and " overwhelm every thing they meet, " both Men and Beaſts. As it is very dif- " ficult to avoid them, becauſe they are " extremely ſudden, ſo, being very light, " a Man may remain under them longer " without being ſuffocated; but there " are others which are occaſioned by the " Thaws in the Spring, which are much " more dangerous, great Maſſes of old " Snow, melting underneath, fall off at " once, making a terrible Noiſe, but " ſtill more Ravage, not only deſtroy- " ing Men and Cattle, but even Trees " and Houſes. *Claudian*, who lived in " the fourth and fifth Centuries, informs " us, that ſuch Accidents were known in " his Time, *Vide* 4^to *Conſul. Honorii:*

" multos hauſere profundæ
" Vaſta mole nives; cumque ipſis fæpe juvencis
" Nauſraga candenti merguntur plauſtra barathro,
" Interdum ſubitam, Glacie labente, ruinam
" Mors dedit.

" A Trifle will produce theſe terrible " Accidents in the *Alps*, the Flight of a " Bird, the Leaping of a *Chamois*, the " firing a Piſtol, a Shout, ſpeaking loud, " the Bells of the Mules and Pack- " Horſes, or even a gentle Rain are ſuf- " ficient to looſen this Snow, and bring " it down to the Deſtruction of Paſſen- " gers; ſo little hold has it on theſe ſteep " Places. For this Reaſon they always " take great Care to caution Travellers " in Places where there is danger of this " Sort, to travel early, and in great Si- " lence, and to get through as faſt as " poſſible, as one would out of a Houſe " on Fire: And the *Voiturins* fill with " Hay or Straw the Bells of their Beaſts, " in ſome Places, as in the *Val d'Averſa*; " in the *Griſons* they put the Bells on- " ly a Foot above the Ground, that their " Sound ſhould not extend ſo far as to " cauſe Danger, and in ſeveral Places " they do not uſe them at all for that " Reaſon. In the Lower *Engadine*, be- " tween the Villages of *Lavin* and *Guar-* " *dia*, there are all along the Road ſe- " veral Caves made in the Rocks for " Travellers to retire into when they ſee " any of theſe Mountains of Snow fall- " ing; but if they are ſo unfortunate as " not to be able to reach ſuch a Place, " the only way is to get as cloſe to ſome " Rock as poſſible, and cling to it, ſo " as not to be carried away, and to en- " deavour to keep their Head free, " to be able to breath till Aſſiſtance " comes; for in all theſe Places there " are People paid by the Magiſtrates to " look after the Ways, and keep them " always open; and as ſoon as there is " fallen any Quantity of Snow, they go " and mend the Ways, ſmooth the Snows " with large Pieces of Wood, drawn by " Oxen, and ſhovel it away, and at the " ſame time examine all dangerous Pla- " ces to ſee if there is no poor Traveller " buried under the Snow. The Hiſto- " ries of *Switzerland* are full of the ter- " rible Ravages made in ſeveral Places, " at different times, by theſe *Avalanches*

3 Trees

Trees torn up by the Roots, and large Stones, which ſeemed to lie without any Support; every ſtep we ſet, the Ground gave way, the Snow which was mixed with it made us ſlip, and had it not been for our Staffs, and our Hands, we muſt many times have gone down the Precipice. We had an uninterrupted View quite to the Bottom of the Mountain, and the Steepneſs of the Deſcent,

" in 1499. When the Emperor *Maximilian* made War upon the *Griſons*, a " Body of 2000 Men of his Troops " having been ordered to paſs a high " Mountain to go into the *Engadine*, an " *Avalanche* falling ſuddenly upon them, " buried 400 Soldiers, which at firſt " cauſed great Confuſion and Terror in " the reſt, which was ſoon turned into " Laughter, when they ſaw all the 400 " Men ſafe and found out of their ſnowy " Tomb, not one being loſt. But the " Year following a Body of *Switzers*, " going into *Italy* for the Service of the " *French*, was ſurprized on the Mount of " St. *Bernard*, by a horrible *Avalanche* " which deſtroyed a hundred of them. " And in our Memory, in the Year 1695, " on the 21st of *February*, at Ten o'Clock " at Night, a violent Wind brought " down a moſt terrible *Avalanche* of " above 100 Yards in width upon a " Village in the *Vall Madia*, which de- " ſtroyed eleven Houſes, with as many " Barns and Stables, ſo entirely, that there " ſcarce remained one Stone upon an- " other, and very much damaged nineteen " other Houſes that remained. The " Violence of the Wind blew open the " Windows of ſome Houſes, and filled " them with Snow; thirty-four Perſons " periſhed in this Storm, ſome were " taken alive, almoſt miraculouſly from " under the Snow, amongſt others a " Mother and two Children. It happens " very often that Travellers who are " caught in the Snows are happily pre- " ſerved and ſaved from Death. When " any one is found ſeemingly dead, with- " out Senſe or Motion, the firſt Reme- " dy is to plunge him in cold Water. " To ſome it will appear both barbarous " and ridiculous to dip a Man, who is " frozen, and almoſt dead with Cold, " into cold Water; but let them know " that it would be certain Death to any " one to give him heat ſuddenly when he " is frozen. They begin therefore with " dipping him into cold Water, upon " which his whole Body is covered with " a Cruſt of Ice; afterwards he is put " into luke-warm Water, then proceed- " ing by Degrees, they get him into a " Bed well warmed, and finiſh his Cure " by Cordials and Fomentations. And " this Rule holds good alſo with regard to " Fruits, when the Froſt has caught them; " one muſt never carry them at once into " a warm Place, but the way is to dip " them into cold Water, and then into " warm Water, by which means they be- " come pretty good again. I will not " leave this Subject without obſerving a " thing, which is truly a phyſical Para- " dox, which is, that the Water that runs " from the *Gletſchers*, or Ice Mountains, " that I have mentioned before, is the " beſt and wholſomeſt that one can drink. " A Traveller that paſſes thoſe Mountains " can drink no other Water if he is heat- " ed, without Danger of catching a fatal " Diſtemper; but he may without Dan- " ger drink this Ice Water, whether faſt- " ing, or after eating, and it has a kind " of balſamick Virtue to reſtore and for- " tify after any Fatigue, this is a known " Fact, and proved by conſtant Expe- " rience. The Inhabitants of the *Alps* " know no other Remedy in Diarrhœa's, " Dyſenteries, and Fevers, than this Wa- " ter of the *Gletſchers*, and a celebrated " Phyſician has recommended it for the " Tooth-Ach. A Man who paſſes thro' " theſe Parts ought carefully to avoid two " Things, *viz.* drinking common Water, " and ſleeping near a Fountain, or in the " Snow, ſince they commonly prove " fatal."

join'd

join'd to the Height where we were, made a View terrible enough to make moſt People's Heads turn. In ſhort, after climbing with great Labour for four Hours and three Quarters, we got to the Top of the Mountain; from whence we had the Pleaſure of beholding Objects of an extraordinary Nature. We were on the Top of a Mountain, which, as well as we could judge, was at leaſt twice as high as Mount *Saleve*, from thence we had a full View of the *Glacieres*. I own to you that I am extremely at a Loſs how to give a right Idea of it; as I know no one thing which I have ever ſeen that has the leaſt Reſemblance to it.

The Deſcription which Travellers give of the Seas of *Greenland* ſeems to come the neareſt to it. You muſt imagine your Lake put in Agitation by a ſtrong Wind, and frozen all at once, perhaps even that would not produce the ſame Appearance.

The *Glacieres* conſiſt of three large Valleys, that form a kind of Y, the Tail reaches into the *Val d'Aoſte*, and the two Horns into the Valley of *Chamoigny*, the Place where we aſcended was between them, from whence we ſaw plainly the Valley, which forms one of theſe Horns.

I had unluckily left at *Chamoigny* a pocket Compaſs, which I had carried with me, ſo that I could not well tell the Bearings as to its Situation; but I believe it to be pretty nearly from North to South. Theſe Valleys, although at the Top of a high Mountain, are ſurrounded with other Mountains; the Tops of which being naked and craggy Rocks, ſhoot up immenſely high; ſomething reſembling old *Gothic* Buildings or Ruines, nothing grows upon them, they are all the Year round covered with Snow; and our Guides aſſured us, that neither the *Chamois*, nor any Birds, ever went ſo high as the Top of them.

Thoſe who ſearch after Cryſtal, go in the Month of *Auguſt* to the Foot of theſe Rocks, and ſtrike againſt them with Pick-axes; if they hear them reſound as if they were hollow, they work there, and opening the Rock, they find Caverns full of Cryſtaliſations. We ſhould have been very glad to have gone there, but the Seaſon was not enough advanced, the Snow not being yet ſufficiently melted. As far as our Eye-ſight could reach, we ſaw nothing but this Valley; the Height of the Rocks, which ſurrounded it, made it impoſſible for the Eye to judge exactly how wide it was; but I imagine it muſt be near three Quarters of a League. Our Curioſity did not ſtop here, we were reſolved to go down upon the Ice; we had about four hundred Yards to go down, the Deſcent was exceſſively ſteep, and all of a dry crumbling Earth, mixt with Gravel,

vel, and little looſe Stones, which afforded us no firm footing; ſo that we went down partly falling, and partly ſliding on our Hands and Knees. At length we got upon the Ice, where our Difficulty ceaſed, for that was extremely rough, and afforded us good footing; we found in it an infinite Number of * Cracks, ſome we could ſtep over, others were ſeveral Feet wide. Theſe Cracks were ſo

* "In ſome Places there are found Mountains of Ice, which not only never melt, but always increaſe by the falling of freſh Snow, ſo that by little and little they extend themſelves, and cover the Country all about them: The *Germans* call them *Gletſcher*, we call them commonly *Glacieres*. Theſe Ice Mountains are moſtly of an immenſe Height, and ſometimes they ſplit from Top to Bottom, which they do with ſo horrible a Noiſe, that one would think the whole Mountain was breaking in Pieces; theſe Clefts differ as to the Width and Depth; there are ſome two, three, or four Feet wide, and three or four hundred Yards deep, and if a Man falls in he is almoſt inevitably loſt, being either killed by the Cold, or drowned in the melted Snow: However, in many Places, one is obliged to paſs over theſe Mountains, there being no other Way, and when there is ny Snow new fallen it is very dangerous, for the Ice covers theſe terrible Clefts, ſo that the Travellers are taken as Birds in a Snare, and fall in and periſh. To avoid theſe Misfortunes Travellers take Guides, who with long Poles ſound the way to ſee there is no Cleft, and when they find one they muſt jump over, or elſe they paſs over a Board, which they carry for that Purpoſe The Difficulty augments when there is Snow new fallen, for then one ſees no track of the way at all, and one muſt obſerve certain Poles ſet up to ſhew the way, which the *Griſons* call *Stazas*, but in many Places the Inhabitants ſet up none, that the Travellers may be obliged to pay them well for being their Guides. On theſe Occaſions it is neceſſary to have Iron Cramps to ones Shoes, not to ſlip, and withal take great Care where one ſets one's Feet, and on this Occaſion I hope the Reader will not blame me for inſerting a wonderful Adventure which happened ſome Years ago to a Hunter of *Glaris*, named *Gaſper Stoëri*. This Man being in purſuit of *Chamois*, with two other Hunters on Mount *Limmeren*, and thinking he was walking on the Snow very ſafely, fell into a deep Cleft of the Ice: His Companions, who loſt ſight of of him, were in great Uneaſineſs, and expected no otherwiſe than that he muſt be killed, either by the Fall, or by the Cold of the Ice. Nevertheleſs that they might not reproach themſelves with letting him periſh, without endeavouring to help him, they ran to the neareſt Cottage, which was full a League off, to look for a Rope, or ſomething elſe to aſſiſt him; but finding nothing there but an old Blanket, they cut it into long Slips, and went to the Hole where their Companion was. While they were going and coming, poor *Stoeri* was almoſt dead with Cold, being up to his Middle in ic'd Water. The Depth of which was ſo great under him, that he could not ſee to the Bottom, and by extending his Arms and Legs, he held himſelf faſt againſt the Sides of the Cleft of Ice, ſo that he was ſhut up there, as it were, in a cloſe, cold, and deep Dungeon. You may imagine in what a Situation he was, he expected nothing but Death, and was recommending his Soul to God, when his Companions arrived, who let down the Slips they had cut, to pull him out; he had Strength enough to tie them about his Body, and by this Means was drawn up to the Top of the Pit; but as he was juſt upon the Point of being delivered, unhappily the Slip which held him up broke, and he fell again into the iced Water, and was in greater Danger than before. He carried down with him a Piece of the Slip which broke, and the Remainder was not long enough

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deep, that we could not even ſee to the Bottom; thoſe who go in ſearch of Cryſtal are often loſt in them, but their Bodies are generally found again after ſome Days, perfectly well preſerved. All our Guides aſſured us, that theſe Cracks change continually, and that the whole *Glaciere* has a kind of Motion. In going up the Mountain we often heard ſomething like a Clap of Thunder, which, as we were informed by our Guides, was cauſed by freſh Cracks then making; but as there were none made while we were upon the Ice, we could not determine whether it was that, or *Avalanches* of Snows, or perhaps Rocks falling; though ſince Travellers obſerve, that in *Greenland* the Ice cracks with a Noiſe that reſembles Thunder, it might very well be what our Guides told us. As in all Countries of Ignorance People are extremely ſuperſtitious, they told us many ſtrange Stories of Witches, *&c.* who came to play their Pranks upon the *Glacieres*, and dance to the Sound of Inſtruments. We ſhould have been ſurpriſed if we had not been entertained in theſe Parts, with ſome ſuch idle Legends. The *Bouquetins* go in Herds often to the Number of fifteen or ſixteen upon the Ice, we ſaw none of them; there were ſome *Chamois* which we ſhot at, but at too great a Diſtance to do any Execution.

There is Water continually iſſuing out of the *Glacieres*, which the People look on as ſo very wholeſome, that they ſay it may be drank of in any Quantities without Danger, even when one is hot with Exerciſe.

The Sun ſhone very hot, and the Reverberation of the Ice, and circumjacent Rocks, cauſed a great deal of thaw'd Water to lie in all the Cavities of the Ice; but I fancy it freezes there conſtantly as ſoon as Night comes on.

Our Guides aſſured us, that, in the time of their Fathers, the *Glaciere* was but ſmall, and that there was even a Paſſage thro' theſe Valleys, by which they could go into the *Val d'Aoſte* in ſix Hours: But that the *Glaciere* was ſo much increaſed, that the Paſſage was then quite ſtopped up, and that it went on increaſing every Year.

to reach him, and, as an additional Misfortune, in this ſecond Fall he broke his Arm. However his Companions did not loſe Courage, they divided the Slip again, and joining the Pieces end to end, lower'd them down to him; he with great Difficulty, with his broken Arm, tied it round his Body, while with the other he held to the Sides of his Dungeon and with this weak Inſtrument, by a Miracle of Providence, was drawn out of this terrible Pit, and though he had at firſt fainted away, God gave him Strength to come to himſelf, and to bear the Fatigue of being carried to a Houſe where he entirely recovered." *Vid. Delices de la Suiſſe, Tom.* 1. *pag.* 22 *& ſeq.*

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We found on the Edge of the *Glaciere* ſeveral Pieces of Ice, which we took at firſt for Rocks, being as big as a Houſe; theſe were pieces quite ſeparate from the *Glaciere*. It is difficult to conceive how they came to be formed there.

Having remained about half an Hour upon the *Glaciere*, and having drank there in Ceremony Admiral *Vernon*'s Health, and Succeſs to the *Britiſh* Arms, we climb'd to the Summit, from whence we came, with incredible Difficulty, the Earth giving way at every ſtep we ſet. From thence, after having reſted ourſelves a few Minutes, we began to deſcend, and arrived at *Chamouny* juſt about Sun-ſet, to the great Aſtoniſhment of all the People of the Place, and even of our Guides, who owned to us they thought we ſhould not have gone through with our Undertaking.

Our Curioſity being fully ſatisfied, we left *Chamouny* the next Day, and lying at *Salanches*, we got the 23d to *Bonneville*. The Nearneſs of this Place to the *Maule* raiſed in us an Inclination to go up it. We ſet about this Taſk the next Day early in the Morning; we fancied that after the *Glacieres* every Mountain would be eaſy to us, however it took us more than five Hours hard labour in getting up; the Aſcent being extremely ſteep; though, after two thirds of the Way, there is a fine green Turf quite up to the Top, which ends in a Point, the Mountain being like a Sugar-Loaf on one Side, and quite perpendicular on that Part which lies fartheſt from *Geneva*. From this Point there is a moſt delightful View, on one Side, upon the Lake, *Geneva*, and the adjacent Parts; on the other, upon high Mountains cover'd with Snow, which riſe around, in form of an Amphitheatre, and make a moſt Picturesque Proſpect. After having ſtay'd ſome time here, we returned back, and went on to *Annecy*, where we lay, from whence the next Day we got to *Geneva*.

Thoſe who are deſirous to undertake this Journey, ought not to ſet out till towards the Middle of *Auguſt*; they would at that time find not ſo much Snow on the Mountain. They might go to the Cryſtal Mines, and divert themſelves with ſhooting of *Bouquetins*; the Oats would then be cut, and their Horſes would not ſuffer ſo much. Although we met with nothing which had the Appearance of Danger, nevertheleſs I would recommend going well armed; 'tis an eaſy Precaution, and on certain Occaſions very uſeful, one is never the worſe for it, and oftentimes it helps a Man out of a Scrape. Barometers to meaſure the Height of the Mountains, portable Thermometers, and a Quadrant to take Heights

with, would be uſeful, if there were a Mathematician in Company. A Tent would not be neceſſary, unleſs for thoſe who had a Mind to examine every thing with the greateſt Exactneſs, and make Obſervations; in this Caſe one might pitch it upon the Mountain, and paſs the Night in it, if it were neceſſary, for it did not ſeem very cold there.

With theſe Precautions one might go through the other Parts of theſe Valleys, which form the Y, and one might find out whether the Cracks change daily as we were told; one might alſo Meaſure thoſe exceſſive high Rocks which are on the Side of the *Glaciere*, and make many other curious Obſervations, according to the Taſte and Genius of the Travellers; who, if they were inclined to Botany, might find an ample Field of Amuſement.

One who underſtood Drawing might find wherewithal to imploy himſelf, either on the Road, or in the Place itſelf; in ſhort, a Man of Genius might do many things which we have not done. All the Merit we can pretend to is having opened the way to others who may have Curioſity of the ſame Kind.

It would be right to take Victuals ready dreſs'd, and Salt Meat, Bread and Wine, for there are ſome Places where one can get no Proviſions, and the little there is to be had in other Places, is very bad. We bought a Sheep, which we killed, and dreſſed upon the Spot.

It is neceſſary to carry Halters to tie the Horſes, cut Shoes, Nails, Hammer, *&c.* for they loſe their Shoes continually in thoſe ſtoney Roads.

With ſuch Precautions all kinds of Journeys become eaſy and agreeable, even in the moſt deſart Countries, and one is then more in a Condition to obſerve with Care and Accuracy, whatever occurs worth Notice.

This is the Subſtance, Sir, of what I can recollect of our Journey. My having ſo long defer'd giving you this Account is owing to the Incapacity I found in myſelf to ſay any thing worth being preſented to a Perſon of ſo good a Taſte as yourſelf. However, upon the whole, 'tis your good Taſte which ought to encourage me: Your lively and penetrating Imagination, which unites in one, both the Poet and Painter, will at once lay hold and perfect what I have but ſlightly ſketched. I am, with the greateſt Eſteem,

SIR,

Your moſt Obedient Humble Servant.

An ACCOUNT *of a Journey to the* Glacieres *in* Savoy, *in a* LETTER *addreſſed to the* Engliſh *Gentleman, Author of the foregoing Letter, by* P. Martel, *Engineer. Tranſlated from the* French.

SIR,

SINCE your Departure for *England* I have had an Opportunity of going to the *Glacieres* of *Chamouny* along with four Friends, whoſe Curioſity had been raiſed by reading your Letter, which has been liked by all People of Taſte, and reſolved to endeavour to make thoſe Obſervations which you was deſirous to have made laſt Year. I therefore took with me every thing that appeared neceſſary for that Purpoſe, and made uſe of all poſſible Precautions to ſucceed, in the Manner you will ſee.

I do not preſent this Account to you, Sir, as a Work fit to be compared with yours, but rather as a Memorial, which will ſerve to ſupply your Journal with what you would have choſen to have put there, and which you certainly would have inſerted yourſelf had you had Inſtruments with you.

You will firſt of all ſee what Inſtruments I provided, and what Precautions I took; you will ſee alſo a Journal of my Obſervations, to which I ſhall add an exact Account of what we ſaw. I ſhall endeavour to explain the Phyſical Cauſe which ſupplies the *Glacieres*. I ſhall put at the End of this Relation a View of the Valley of *Chamouny* [a], taken from the Church; a View of the Valley of *Ice*, taken from *Montanver* [b]; a Map of the Road from *Geneva* [c] to the Source of the *Arve*, rectified from Obſervations made upon the Places; and ſome Deſigns of *Chamois* and *Bouquetins* [d], which you may perhaps like to ſhew to your Friends in *England*. I ſhall join the Obſervations of one of my Friends, and Fellow Travellers, upon the Plants which we found both upon the Mountain, and in the neighbouring Places. Laſtly, I ſhall compare our Obſervations and Menſurations, with thoſe of the celebrated Mr. *Fatio de Duillier*, which are inſerted in the Appendix to the Hiſtory of *Geneva*. Be aſſured, Sir, that this Relation is very exact, all

[a] Plate 3. [b] Plate 1. [c] Plate 2. [d] Plate 4.

all the Operations have been repeated, and calculated twice with great Care, ſo that you may rely on the Exactneſs of every thing contained in this Account. Before I come to the Point, it may be proper to tell you who were the People that compoſed our Company. There was a Goldſmith very well ſkilled in Minerals; an Apothecary who was a good Chemiſt and Bótaniſt; Monſieur *Martin* and Mr. *Girod*, whom you know to be very curious; which made us a Company pretty well qualified for this Undertaking; eſpecially as each of them, according to his particular Turn, contributed to diſcover ſomething, and beſides that were very ſerviceable to me in making my Obſervations.

I took with me a good Barometer, included in a wooden Tube, which I filled at every Station, according to the Method of *Torricelli*, with all poſſible Precaution; and for this Purpoſe, carried a good deal of Mercury to be always provided in Caſe of Accidents: I had with me my Semicircle of ten *Engliſh* Inches Radius, with ſome Sea Compaſſes, a Camera-Obſcura, and all Implements for Drawing. I took alſo a Thermometer of my own make, filled with Mercury, divided into a hundred equal Parts, from the freezing Point, to boiling Water, anſwering to 180 Parts of *Farenheit*'s Thermometer, beginning at 32, and ending at 212. I divided my Barometer into Inches and Lines, *French* Meaſure, to have at once the Height of the Mercury. I left at *Geneva* with Baron *Rotberg* a Barometer and Thermometer, ſimilar to thoſe I took along with me; that I might compare our Experiments, with the Variations of the Barometer, in caſe the Weather had varied; but the Weather being all the Time fine, the changes were not ſenſible; your Journal ſerved us as a Guide, both for our Rout, and for ſeveral Precautions you mention as neceſſary.

I muſt obſerve to you that before our Departure, I waited on Profeſſor *Calandrini*, to get ſome farther Inſtructions, concerning the Proportion of the Height of the Mercury, at different Diſtances from the Center of the Earth; he communicated to me a Canon to make a Table by, for that Purpoſe; but I preferred the fundamental Experiment, and the Tables of Mr. *Scheutzer*, for Reaſons which may be ſeen in the Philoſophical Tranſactions N° 405. You will find here all the Heights of the Mountains exactly calculated by thoſe Tables, according to the Height the Barometer ſtood at, and I found them agree more exactly than any other with my Trigometrical Operations.

We left *Geneva Aug.* 20. 1742. Before we ſet out I tried my Barometer

Barometer, which upon the Side of the *Rhone* ſtood at 27 Inches $\frac{9}{11}$ *; and the Thermometer at 18 D. above the freezing Point which anſwers to 60. of *Farenheit*. We dined at *Bonneville*; where the Barometer was at 26 $\frac{8}{11}$; which make 6 Lines leſs than at the Side of the *Rhone* at *Geneva*; thus it appears that the *Arve* is at *Bonneville*, above the Level of the *Rhone* 403 *F.* 10 *I.* 5 *L. French* Meaſure; which is not a very great Riſe, conſidering the Diſtance is 5 Leagues, or 15 Miles *Engliſh*.

We left *Bonneville* at half an Hour after two, and reached *Cluſe* about ſix, and got to *Salanches* that Night. We made ſeveral Trials of the Echoes, which you mention in the Valley between theſe two Places, and found they continued full four Minutes. The great Drought had intirely ſtopped the fine Caſcade you mention, at the *Nan Darpena*. At *Salanches* I tried my Barometer, which was at 26 $\frac{9}{11}$, which was ten Lines leſs than at *Geneva*, and gave us in Height 670 *F.* 10 *I.* 0 *L.* above the *Rhone*. The Thermometer was not changed at all. Going from *Salanches* to *Servoz* we went through *Paſſi*, a Village ſituated almoſt at the Foot of a Mountain of the ſame Name. This Pariſh contains ſeveral Hamlets, which extend near three Leagues; *Paſſi* is on the right Side of the *Arve* going down the Stream, and on the other Side is ſituated the Village of *St. Gervais*, near four Miles beyond the laſt Hamlet of *Paſſi*. Leaving *St. Gervais* we began to climb the Mountain, and paſſed over a little Bridge, under which runs a Water called *la Gouille*, which falls from the Mountain, and carries with it a very black Sand; nevertheleſs near the Bridge there is a little Pond at the Bottom of a Hill, where this Water is vaſtly clear and beautiful. Not far from thence there is a Water which is called the *Nan des bois:* This too carries along with it a black Sand, which the Inhabitants ſay is blacker the more abundant the Water is: From thence we arrived at *Servoz*, on the right Side of the *Arve* in a very narrow Valley, from whence we began to diſcover the high Mountains which ſurround the *Glacieres*, the Barometer ſtood at *I.* 25 $\frac{7}{11}$, which is *I.* 1 $\frac{2}{11}$ lower than at the *Rhone*, and gave for Height *F.* 1306. 0. 7. and from *Salanches*, the Difference of *I.* $\frac{2}{11}$ which is *F.* 636. 0. 1. in five Leagues; this being the greateſt Declivity that the *Arve* has from its firſt Source: For

* All the Meaſures mentioned here are *French* Meaſure, the Foot being to our Foot as 114 to 107.

here it rolls from Mountain to Mountain 'till it comes to the Plain of *Paſſi*. At *Servoz* they ſhew'd us Lead-Ore, which to me ſeem'd to be of little Value; they aſſured us that this Valley of *Servoz* was formerly a Lake. There is ſtill remaining an old Tower, at a ſmall Diſtance from the *Arve*, which they call the *Tower of the Lake*. They add moreover, that on the Side of this Lake, there was a Town called the City of *St. Peter*, which was ſwallowed up, and that the Lake having broke thro' its Banks, run all out into the *Arve*, and there remains only now a marſhy Valley.

From *Servoz* we took the Rout of *Chamouny*; we had the *Arve* on our right Hand, but ſoon paſſed it over a very bad Bridge, called *Pont. Peliſſier*; from whence we came to that ſteep Mountain, which they call *les Montées*, or the Stairs, where one of our Horſes loſt a Shoe and almoſt all his Hoof; from thence we entered into the Valley of *Chamouny*, having on our left the *Arve*, and on our Right a fine Hill, which reaches as far Southward as the Mountain called *Mont blanc*. Here we found ſeveral Signs of Iron Ore, at leaſt they no ways differed from thoſe by which they find out Iron Mines in *Burgundy*. A League farther we came to the Village of *Fouilly*, which is only a Hamlet of *Chamouny*, and from thence we arrived at *Moncoir*, where there is a Church belonging to *Chamouny*; and from thence paſſing the *Arve*, over a Bridge, we arrived at *Chamouny* in the Evening. Here I tried the Barometer, which at the Side of the *Arve* ſtood at 25 *F.* $\frac{4}{10}$, which is 1 *I.* $\frac{1}{10}$ lower than at *Geneva*; from whence I concluded that the *Arve* at this Place was above the Level of the Lake 1520 *F.* 5. 5. The Night between the 22^{d} and 23^{d} I hung out my Thermometer in the open Air, and found it in the Morning two Degrees above the freezing Point, which anſwers to 35 $\frac{1}{2}$ Degrees of *Farenheit*. This made us cloath ourſelves warmer, in order to go up the Mountain; for which Place we ſet out about ſix in the Morning, having with us ſeven Men both to aſſiſt us in climbing, and to carry Proviſions; we took in other Reſpects the ſame Precautions as you did, and I carried my Inſtruments with me. At a Halt which we made after three Hours climbing, I tried my Barometer, which gave me 1 *I.* $\frac{4}{10}$ lower than at *Chamouny*; and by the Table, I found that we had mounted 1179 *F.* 0. 1. from the *Arve* at *Chamouny*; after two Hours and half more very difficult climbing, we got on the Top of the Mountain called *Montanver*; from whence we ſaw the Ice Valley, and were ſtruck with Aſtoniſhment at

at ſo extraordinary a Sight. After having taken a View of it while we reſted, I tried the Barometer, which ſtood at 22 $\frac{8}{10}$ which was 2 $\frac{4}{10}$ leſs than at *Chamouny*, which gives for the Height of the Mountain 2427 *F.* 8. 10. and above the Level of the Lake *F.* 3947. 2. 3.

In order to find a Place to Dine in we deſcended towards the Ice, and got behind a kind of Mound, of great Stones which the Ice had raiſed, as I will explain hereafter. The Barometer roſe two Lines, which ſhewed us we had gone down *F.* 159. 7. 8. in this Place we dreſſed our Victuals, and dined under the Shade of a great Rock. The Thermometer was got down to only one Degree above the freezing Point, which anſwers to about 33 $\frac{1}{2}$ of *Farenheit.* We were not able to ſtay here long by reaſon of the Cold, which obliged us to get into the Sunſhine, altho' we were dreſſed as in the Middle of Winter; and after Dinner every one went according to his Inclinations, ſome upon the Ice, others to look for Cryſtal; for my Part I took two Men with me, and returned to *Montanvert*, where I remained near three Hours, which time I employed in making a Plan of the *Glacieres*, which I have put at the End of this Account. I was aſſiſted in this Operation by my Guide, who was a very intelligent Perſon, not only knowing the Country, but having alſo aſſiſted in the laſt Survey, which the King of *Sardinia* had cauſed to be made of *Savoy*. I have more reaſon to believe this Map to be exact, becauſe I have compared it with a Map that I ſaw at the *Greffier's* of *Chamouny*, which was of great Service to me. The Nearneſs and Height of the Mountains rendered it impoſſible to make uſe of my *Camera Obſcura*, to take a Proſpect of the *Glacieres*, ſo that leaving *Montanvert*, I arrived at the Priory of *Chamouny* at Seven in the Evening.

My Companions were next Morning in ſo great a hurry to go away, that I had not time to draw any Views as I intended; all I could do was to take with my Semicircle the Height of the *Mont Blanc*, by two different Operations which correſponded exactly. I did the ſame for the *Montanvert*, where we had been the Day before, and juſt ſketched out the View of *Chamouny*, here annexed, taken from above the Church, from whence I could ſee the Mountain where the *Arve* takes its Source, the chief Outlets of the *Glaciere*; the higheſt Mountains; and the Villages, as you will ſee in *Plate* 3.

I ſhall here interrupt my Narration, to give you a more diſtinct Idea of the Valley of *Chamouny*, the *Glacieres*, and whatever ſeemed to me to be moſt remarkable, during the ſhort time which I remained there. Firſt of all then, The Valley of *Chamouny* may be conſidered as reaching from the Top of the Mountain called the *Montées*, as far as the Mountain, from from whence the *Arve* takes its Source, which is called the *Col de Balme*, which bounds it to the N. E. The Maps give this Valley the Form of a Creſcent, but if it were ſo it ought to be narrow at the Ends, and wide in the Middle; but it is on the contrary rather narroweſt in the Middle; however it muſt be owned that it bends conſiderably. At the Entrance into it from *Servoz* it runs from Weſt to Eaſt, and afterwards to N. E. ſo that it forms an Elbow about the Middle.

The Length of this Valley is about eighteen *Engliſh* Miles; as for its width, at leaſt in the Middle, it cannot be above 400 Geometrical Paces, or about half an *Engliſh* Mile. It contains ſeveral Hamlets, the four principal ones are, *Fouilly*, juſt as you come into it; *Montcoir*, where there is a Church on the Left of the *Arve*; the Priory, which is in the Middle, properly called *Chamouny*, and is on the right Side of the River; and *Argentiere* near the End of the Valley. This Valley is bounded on the N. E. by the *Col de Balme*, where the *Arve* riſes from two Springs, at a very little Diſtance from one another; having the *Glacieres* to the S. E. all along the Valley, which reach as far as above St. *Gervais*, in the Valley of *Salenches*, where there is a *Glaciere*, called *Glaciere de St. Gervais*, which comes from *Mont Blanc*, bending a little towards the South, and not following the Curve of the Valley.

The N. W. Side is bounded by the Mountains of *Valorſine*, and the S. W. by the Paſſage which goes to *Servoz*. The *Arve* runs quite through the Middle of the Valley, receiving in its Paſſage the *Arbairon*, and many other Rivulets and Torrents, which only have Water when the Snows melt. To have a diſtinct Idea of the *Glacieres* you muſt ſuppoſe a great Valley, nearly parallel to that of *Chamouny*, but much higher, it being ſituated on the Top of high Mountains. This Valley may be about twelve Miles long, and about two broad; a great Part of it may be ſeen from *Montanvert*, which is the Mountain we went up. From thence you ſee many Points of Mountains, ſhooting

ſhooting up to a prodigious Height, altho' the Place on which we were is near *F.* 2427. 8. *Paris* Meaſure high above the Valley, the Barometer being lower by 2 $\frac{1}{12}$ Lines at the Top of it than at the Bottom, and having calculated the Height of this Mountain, by a trigonometrical Operation, upon a Baſe of 1440 Feet, I found nine Feet more, and this by two different Operations. Having from the ſame Baſe meaſured the Height of the higheſt Point of the *Mont Blanc*, I found by two Operations 10939, taking in the Height of the Mountain where we were, and from the *Rhone* 12459 Feet. Moſt of theſe Points are all covered with Ice, from the Top quite to their Bottoms, which join the *Glacieres* of each Side.

I can think of nothing more proper to give an Idea of this Valley, than the Compariſon you have made uſe of, namely, a great Lake, which being violently agitated by a ſtrong Wind, ſhould have been frozen all at once. For all the *Glaciere* when ſeen from *Montanvert* has at firſt that Appearance; but as ſoon as you come near it, you perceive that ſome of the Inequality or Waves are more than forty Feet high.

This great Valley has many Outlets between the Mountains; five of which, being the principal ones, come into the Valley of *Chamouny*, and theſe Extremities, or Outlets, are what the Inhabitants of *Chamouny* call *Glaciers*. Theſe Outlets are very ſteep, ſome more ſo than others. Now to judge of the Cauſe, which occaſions a perpetual Ice in this Valley, we muſt conſider its Situation in two Reſpects; *Firſt*, As to the Sun; and *Secondly*, As to the Atmoſphere. We muſt conſider its greateſt Length, as lying from the Sunriſing in the Summer Solſtice, to the Sunſetting in the Equinox, by reaſon of its Curvity, being of all Sides ſurrounded with very high Mountains, and that chiefly on the South Side, where there is the Mountain *des Eſchaux*, which is very high. The North Side of this Mountain is always covered with Ice, while the Mountain, which is oppoſite to it on the other Side of the *Glaciere*, has no Ice at all on it. As to the Atmoſphere, you muſt remember that the Surface of the Ice is raiſed above the Valley of *Chamouny* 2262 Feet. This great Height cauſes the Air to be always very cold in this Valley of Ice, of which I will add ſome inconteſtable Proofs. We were there in the Month of *Auguſt*, in very fine dry Weather, without any Appearance of Rain, nor was there any

any Wind ſtirring all that Day we were upon the Mountain, but always a clear Sun ſhine; nevertheleſs my Thermometer deſcended to two Degrees above the freezing Point, which anſwers nearly to 35 $\frac{1}{7}$ of *Farenheit*; and this in the Valley of *Chamouny*, where the Air is not near ſo piercing as it muſt neceſſarily be on the Ice Valley, where the Thermometer ſunk one whole Degree, under the Rock where we dined, beſides when we ſet out from *Chamouny* in the Morning, we paſſed dryſhod over the Beds of many little Streams, which deſcend in the Day-time from the Mountains, and which ran abundantly at our Return in the Evening; ſo that we were forced to go over the Foot Bridges. *Thirdly*, We ſaw upon the Valley of Ice a vaſt Number of little Reſervoirs, containing a very fine Water, which immediately congeals after Sunſet; and that in the greateſt Heats, as all the Inhabitants of the Country aſſured me unanimouſly, not having remained late enough on the Mountain to have ſeen it myſelf. But this Obſervation is confirmed by the little Rivulets above mentioned, which ceaſe running in the Night. If one conſiders the Height of theſe Mountains, which I have already mentioned, whoſe Tops loſe themſelves in the Clouds; if one conſiders the vaſt Quantities of Water, which muſt come from them by the melting of the Snow, that covers them upon the leaſt Rains that happen in the Plain, and that this Water and Snow turn into Ice immediately at Sunſet; it is eaſy to diſcover the Cauſe which fills theſe Valleys with Ice. Theſe Reaſons, in my Opinion, are ſufficient, without having recourſe to the Effects of Nitre; nor indeed have we found any Appearance of it in the Taſte of the Ice: And I may add, that, having put ſome of this Water into a Silver Spoon, and made it evaporate by Fire, it left neither Sediment, or any Films, nor any other Marks of Nitre: So that I am firmly perſuaded, that Nitre has no Share in the Production, or the Conſervation of this Ice. For Ice, produced by an artificial Congelation, has an acrimonious Taſte; whereas this produces a ſweet Water, equal to that of our beſt Springs. The *Glacieres* in the Ice Valley are not always in the ſame State, they ſometimes augment, and ſometimes diminiſh; it is probable they have been more abundant; by the Marks which remain they muſt have been 80 Feet higher than they are now. One ſees on both Sides of the *Glacieres*, and in the Outlets, a white Stone, mixed with a white Sand, very like the Rubbiſh of old

old Buildings. The Stone appears calcin'd, and breaks like Lime that has been expoſed ſome time to the Air; the Edges of the *Glacieres* are very ſteep, probably becauſe the Ice riſes againſt the Bank. The Place where we dined was a kind of large Parapet of Stone-work, the Stones of which were very large, and heaped one a Top of the other like a Wall, being very ſteep towards the Ice, with very little or no ſlope. This kind of Wall was about 80 Feet high, and 20 thick; behind it was a kind of a Terras which joined the Mountain, from whence we could not ſee the Ice without getting on the Parapet. It is to be obſerved, that the *Glaciere* is not level, and all the Ice has a Motion from the higher Parts towards the lower; that is to ſay, that it ſlides continually towards the Outlets into the Valley, which has been remarked by many Circumſtances. *Firſt*, By great Stones, which have been carried quite into the Valley of *Chamouny*; they ſhewed us one of a very large Size, which ſeveral old People aſſured us, that they had ſeen upon the Ice. I have already ſaid, that the Waves, for ſo I call the Inequalities of the Ice, were ſome of them 40 Feet high. I will now add, that the Hollows between them run all tranſverſly to the Courſe of the Ice; ſo that in the Valley they lay one way, and in the Outlets another, always croſſing the Direction of the Ice: The Cavities between the ſmall Waves are all full of a very clear Water; there are on the Ice an infinite Number of Clefts, of different Widths, ſome twenty Feet long, and four or five wide, others leſs. Theſe are almoſt all in the weak Parts of the Ice, *i. e.* in the Hollows of the Waves, and all directed like the Waves in a tranſverſe, or oblique Manner. 'Tis by theſe Clefts we could judge of the Thickneſs of the Ice; in the Hollows it is only 5 or 6 Feet thick, in the high Waves 40 or 50. The Reflection of the Light in theſe Clefts produces the Effect of a Priſm; and 'tis very beautiful, even from the Mountain, to ſee the Mixtures of blue and green ariſing from theſe Clefts, and the Reſervoirs of Water, eſpecially when the Sun ſhines on this vaſt Valley of Ice. By theſe ſame Clefts you ſee under the Ice, Waters which run from it, at leaſt in the Day-time, which ſometimes muſt touch the inferior Surface of the Ice, as they did then, of which I ſhall give two Proofs, which appear inconteſtable. *Firſt*, Our Guides puſh'd a Pole a great way in, and having let it go, it roſe again of itſelf, which could be occaſioned by nothing but the Water.

The

The other Proof is, that when any have had the Misfortune to fall into theſe Clefts, which has happened to ſome Searchers of Cryſtal, they have been found again upon the Ice, perfectly preſerved after a few Days, as ſoon as there has been a little Rain, or mild Weather. The Cauſe of this can only be the Increaſe of the Water, which, not finding a ſufficient Paſſage under the Ice, riſes by theſe Clefts, and ſo gets rid of every thing that is lighter than itſelf: But becauſe the Paſſage for ſo large a Quantity of Water is not ſufficient, though the Number of Clefts be very great, it is very probable, that it often raiſes the whole Maſs of Ice. One might draw from this many Conjectures, both for diſcovering the Cauſe of the Increaſe of the *Glacieres*, during the Time of the greateſt Heats, and alſo to explain the Elevation of the Stones on the Edges.

I have already ſaid, that the Thickneſs of the Ice is very conſiderable, and I will now ſay ſomething upon its Conſiſtence. We found it generally much lighter, and much thinner towards the Edges of the Valley, than in the Middle: For although both the one and the other ſwim upon the Water, yet that in the Middle ſinks the deepeſt. I obſerved before that the Mountains or Points, which we ſaw from the Mountain which we went up, are very high, and that there are many of them. I particularly mentioned three of the principal of them, namely, one towards the South, and two towards the Weſt; that which is towards the South, and which we firſt diſcovered before us, is called *L'Eguille du Dru*; this Point looks very like an Obeliſk, the Top of which is loſt in the Clouds, making a very acute Angle at the Summit, and not much unlike a great *Gothic* Tower, built of white and brown Stone, the Parts of which are very rough. For we muſt obſerve, that the Pieces which fall off break in a perpendicular Direction, leaving here and there little Parts by themſelves, which make the Mountain look as if it was compoſed of an infinite Number of little Towers. The Effect of this is very beautiful when the Sun ſhines on them, by reaſon of the agreeable Mixture of *Clair Obſcur*, which is prodigiouſly varied: This Mountain is too ſteep to have any Ice upon it, or indeed much Snow. The two other Points on the Weſt Side are *L'Eguille de Montmallet*, which is covered always with Ice, and is the neareſt the *L'Eguille du Dru*; and *Mont Blanc*, which is the fartheſt to the Weſt. 'Tis this Point of *Mont Blanc*, which is ſuppoſed to be the Heigheſt in all the *Glacieres*, and perhaps of all the *Alps*. Many Perſons of the Country

Country who have travelled assured me, that they had seen it from *Dijon*, and others from *Langres*, which is 135 Miles distance. For the Top of it is easy to be distinguished, because it is blunt, and quite steep on the North-side; if the Sides were prolonged, so as to make an Angle at the Top, I imagine it would be of 25 or 30 Degrees. This Mountain is entirely covered with Ice, quite from the Top down to the Bottom. The Mountain which we went up in order to see the Valley of Ice has three Names, the East-side is called *Montanvert*, and that towards the West *Blaitiere*, and that in the Middle the *Charmaux*. Upon this Mountain there rise four Points something like the *L'Eguille du Dru*, which are called the Points of *Charmaux*. All these Points are absolutely inaccessible, some by reason of the Ice, which covers their Surface almost entirely, as *Montmallet* and *Mont Blanc*, and others on account of their Steepness. 'Tis at the Foot of these Mountains, and along the Valley of the *Glacieres*, that they find Crystal, and not under the Ice, as some have pretended. The Crystal is found in the very Substance of the Rock, after this Manner: Those who go in search of it know where to find it by certain white and blue Veins, which they see upon the Rock. These Veins are either alone, or many of them together, which unite in one Point; they strike upon the Extremity of the Veins, and when they hear a hollow Sound they break the Rock, and find the Crystal in Cavities, which are sometimes many Feet deep, which they call Ovens. Crystal is a Stone which, in my Opinion, is produced by a gentle Vegetation, and not by Congelation; every one knows that they are Shoots, all of the Figure of a Hexagon, joined one to another, almost like the Cells in Honey Combs. These Shoots are sometimes unequal in Thickness and Length, but all terminate in a Point, as if they had been cut Diamond Fashion, they all stick to a kind of Stone of an irregular Shape, which is a kind of Root to them, partaking of the Nature both of Rock and Crystal, of a blue, white, black, and brown Colour, extremely hard and heavy; this Stone is called the *Matrix*. We must observe, that when once the Crystal is taken away, there never comes any other, although the *Matrix* be left in the same Place where it was found: And this has made some People think that Crystal was formed from the Beginning of the World. It happens sometimes that Pieces of Rocks fall down with the Ovens of Crystal contained in them, and roll upon the Ice. 'Tis for this Reason that the Countrymen often find Pieces of Crystal on the Surface of the Ice,

and ſometimes adhering to it, and even in the Current of the Water, which forces itſelf up thro' the Clefts of the Ice. There are ſome Places where the Cattle croſs over the Ice to go and feed at the Bottom of the Mountains, on the other Side of the Valley, in Places where the Sun can come, and where there is ſome Paſture, and they do it the more eaſily, becauſe the Surface of the Ice is ſprinkled over with Gravel, or ſmall Particles of Rock, which the Wind probably brings from the neighbouring Mountains. We found alſo upon the Ice many large Stones, which in my Opinion had fallen down from the Tops of the Mountains, altho' the People of the Place pretend that they were raiſed from the Bottom of the *Glacieres*. I have already obſerved, that the Valley of Ice has a Communication with the Valley of *Chamouny*, by five Openings, each of which has a Name, as will be ſeen in the Plan at the End of this Account. The *Glacieres* ſtretch by diverſe Openings and Vallies, as far as the Valley of *Courmayeu*, in the *Val d'Aoſte*, but not by an uninterrupted Communication as formerly, by reaſon of the falling down of ſome Pieces of the Mountain: And therefore it is impoſſible to go from *Chamouny* to *Courmayeu*, by the Valleys of the *Glacieres*. Of the five Openings which end in the Valley of *Chamouny*, that which is called the *Glacier des Bois* is the moſt conſiderable, not only for its Beauty and Largeneſs, but becauſe the River *Arbairon* has its Source there; it comes out from under the Ice, through two Arches all of Ice. 'Tis a Sight equally beautiful and extraordinary to ſee the Inequalities which riſe above theſe Paſſages more than 80 Feet in Height, and which appear to be the fineſt Cryſtal in the World, reflecting an infinite Number of bright Colours, juſt as if one looked through ſo many Cryſtals, as there are Excreſcencies of Ice. For you muſt imagine this Place, as compoſed of a vaſt Quantity of vertical Shoots, adhering to each other, and terminating unequally both above and below. 'Tis not without great Difficulty that we came to this Place, ſo worthy of Admiration; we were even forced to go thro' one of the Paſſages where the Water was not ſo abundant as at the other, and not without Danger, by reaſon of the Pieces of Ice which fall off ſometimes, which our Guides have ſeen happen.— The *Arbairon* is a large Stream which falls into the *Arve*; it comes from under theſe Arches, and carries along with it a vaſt many Particles of Gold, as the Goldſmith who was with us ſhewed us. The Rivulet of *Argentiere*, which comes from the *Glacier* of the ſame

ſame Name, carries with it alſo Pieces of Gold and Silver, which has not been obſerved at the Source of the *Arve*. I imagaine that the *Arbairon* has another ſource beſides the melting of the Ice, becauſe the Water never fails no more than that of the *Arve*, which riſes in a Mountain, where there is neither Ice nor Snow in Summer. However that may be, the *Arve* and the *Arbairon* carry along with them a very fine and white Sand, which makes the Water look as if Soap had been diſſolved in it; it keeps this Colour, till it receives the *Nan de Bois* into it, of which I have already ſpoke. Which brings a very black Sand, that changes its Colour to a dark grey, which it keeps till it falls into the *Rhone* below *Geneva*. I imagine it may take along with this laſt mentioned Water ſome Gold Duſt, for we obſerved in croſſing this *Nan de Bois* a vaſt many Stones, which ſeemed to contain both Gold and Silver. All the *Glacieres*, at leaſt thoſe which are called the *Glacieres of Chamouny*, are ſituated on the left Side of the *Arve*; there is indeed a little one on the other Side, in the Mountain of *Valorſine*, but it is not conſiderable, and has no Communication with the reſt. Before I quit *Chamouny*, I'll ſay a Word concerning its natural Hiſtory. The Inhabitants of this Country are very good ſort of People, living together in great Harmony, they are robuſt, live to a great Age, and have very few Beggars among them; they don't begin to cultivate their Lands till the Spring, after the Snows are melted, which is ſometimes at the End of *April*, and ſometimes at the End of *May*; then they begin to Plough, and Sow their Grains, ſuch as Rye, Barley, Oats, Beans, and Buckwheat, which they reap in *September*. And of all theſe Grains they make a kind of Cake, which is very hard, becauſe they dry it in the Sun after it is baked, and they preſerve it thus many Months. They don't make uſe of Wheat but for Children, and that in very little Quantity. 'Tis ſurpriſing to ſee how the Mountains are cultivated, in Places that are almoſt perpendicular, where they Plough and Sow as cleverly as can be done on the Plains. This we firſt obſerved near *Salanches*. Fruits ripen very late in this Country, for we ſaw Cherries there which were not quite ripe, and we found Flowers and Fruits on the Mountain, which are never ſeen with us, but in the Spring. We obſerved, as we were going up the Mountain, a fine clear Mineral Water, partaking of Iron and Sulphur, it is very delicious and cool; their Honey is white, reſembling very much that of *Narbonne* for Colour, but not for Taſte. The Sheep which are kept

kept near the *Glacier* lick the Ice, which ſerves them for drink; they are left without any one to watch them, there being in this Valley no Beaſt of Prey, though Bears, Wolves, and Foxes abound in the Country all about. Nothing inhabits here but *Chamois*, *Bouquetins*, who keep in the high Mountains, and a great Quantity of *Marmotes*; this is the Account the Inhabitants gave us of this Animal. They ſleep ſix Months of the Year, that is, all Winter, and in the Summer they provide a warm Couch againſt their Time of Sleeping; for this End they cut Herbs with their Teeth, and in order to carry them to their Holes one of them lays on its Back, and the others load it like a Cart, and then drag it by the Ears to the Hole. They pretend alſo that they provide againſt being ſurprized, by placing Centinels, who give them the Alarm by a whiſtling Noiſe; they eat theſe *Marmotes*, and find them very good, and uſe their Fat to burn in Lamps; there are no Birds of Prey in this Valley, nor Crows, neither are there ever any Swallows. I obſerved a remarkable kind of Graſshopper, much reſembling a Dragon Fly, with long Legs. We ſtaid at *Chamouny* from *Tueſday* Evening to *Thurſday* Morning; but I could make no more Experiment with my Barometer, becauſe it had been damaged. We went from thence, and lay at *Cluſe*, and from that Place to the Mountain called the *Maule*, which I look upon to be ſomewhat higher than *Montanver*, becauſe we were half an Hour longer in going up it, although the Road is very even, as well as ſteeper. I wiſhed to have had my Barometer to take the Height of it, but I was forced to content myſelf when I got up to the Top to obſerve the Angle of Poſition of the *Glacieres*, with reſpect to *Geneva*, which I found to be 158 Degrees preciſely. I looked down on all the Objects about us with great Pleaſure; the Proſpect put me in mind of that fine Plan which you have ſeen in our Publick Library, for the Plain below, ſeen from this high Mountain, at firſt Sight gives one the ſame Idea. 'Tis wonderful to ſee thoſe Places, which we take to be nothing but high Mountains, divided by fine and fertile Valleys, covered with all ſorts of Trees and Fruit, an infinite Number of Villages, which being in deep Bottoms, appear from thence to be ſituated in a rural and agreeable Manner. In a word, all the Pains I took to clamber up this Mountain were ſufficiently recompenced by a Proſpect ſo beautiful and ſo uncommon. After having ſtayed in this Situation about half an Hour, we went down again, and continued our Journey. We lay at *Contamines*, from whence

whence we arrived at *Geneva*, *Satuday* Morning the 26th, all vaſtly well ſatisfied with our Journey, and without any other regret than not having ſtayed longer at *Chamouny*, to have conſidered the Beauties of the Places thereabouts. Thoſe who may hereafter be deſirous to undertake this troubleſome and curious Journey, ought to add to the Precautions which we have pointed out, that of imploying more time in it, and, if poſſible, to come round by *Switzerland*, which would be very eaſy from *Chamouny*. Nothing could be more agreeable than this Journey, by reaſon of the Rarity and Variety of Views which continually occur; but then it would be right to view the *Maulè* in going there. Suffer me, Sir, to addreſs this Account of our Voyage to you, as the Perſon to whom of right it belongs; you marked us out a way which was eaſy to follow by the Help of your Directions. I hope you'll pardon the Incorrectneſs of my Style, and want of Method in putting things together; I committed to Paper whatever occured to me and my Companions; 'tis Truth alone which can recommend theſe Papers, and 'tis that alone which can engage you to receive them favourably, and as a Mark of the ſincere Regard with which

I am,

SIR,

Your moſt Humble

and moſt Obedient Servant,

P. M.

P. S. In going up *Montainver*, through a very narrow and difficult Path, towards the *Glaciere de Bois*, we found ſome fine Plants, without either quitting our Guides, or our Company, or going out of the Path; namely, *Pyrola folio mucronato*; *Conſolida Saracenica minor Alpina*; *Alchymilla Alpina minor quinque-folia*; *Lamirum album Plinii*; *Aſclepias flore albo*; *Victorialis longa*; *Euphraſia Alpina luteis floribus*; *Meum Athamanticum*; *Carlina acaulis*; *Helleborus albus*; *Lapathum* of many Kinds. Not to mention many other Plants, which would rather make a Catalogue than a Relation of a Journey. All along this Mountain there are many kinds of Pine and Fir; there are alſo many Larch Trees in *Latin Larix conifera folio deciduo*; we found there ſome fine Agaric, and in the Trunks of ſeveral Larches there were Horizontal and Lateral Inciſſions, by which the *Italians* had extracted

ed Turpentine. At the Source of the *Arbairon*, which is at the Foot of the *Glaciere de Bois*, in the Valley of *Chamouny*, and even in the Bed of this Source of the *Arve*, which was not covered with Water, we found the following Plants; namely, *Muſcus capillacius lanuginoſus denſiſſimus*; *Lythophyton album nodoſum*; *Sedum alpinum ſubbirſutum*, *coronâ floris purpuraſcente*, *diſco viridi*, and many other kinds of *Sedum*.

Compariſon of our Obſervations with thoſe of Mr. Fatio de Duillier, *which are inſerted in the* Appendix *to the* Hiſtory *of* Geneva, 4th Edit. Tom. II. pag. 450.

"THE Height of the Mountain called the *Maudite* is above "the Level of the Lake at leaſt 2000 *French Toiſes*, or "about 4374 *Engliſh* Yards."

I ſaid above, that we found the Height of the *Arve* at *Chamouny* 1520 *F.* above the Level of the *Rhone* at *Geneva*, and the Height of the higheſt Mountain 10939 *F.* above the *Arve* at *Chamouny*, which in all make above the *Rhone F.* 12,459. 5. 5. which being reduced to *Toiſes*, give 2076. 3. 5. $\frac{1}{4}$. Now Mr. *Fatio* has found it above 2000 *Toiſes* above the Level of the Lake, 7 Leagues above *Geneva*, where it muſt at leaſt be 50 Feet higher than *Geneva*; ſo I take it that we have correſponded pretty exactly in our Operations. It is to be remarked alſo, that Mr. *Fatio*'s Obſervation was made at 45 Miles from the Mountain, and mine juſt at the Foot, and conſequently much leſs ſubject to Refraction.

F I N I S.

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1 Le Mont Blanc	5 Le Mont Legan	9 La Mont de Valvoine	13 Le Glacier des Bossons	La hauteur de Cîme de Bonne Ville Sur le Niveau du Rhone 498
2 Le Mont Malay	6 Le Mont Pâcelerais	10 Le Pont Pelisser & les Montes	14 Le G. d'argentiere	La hauteur a Salanche 670 p La hauteur a Servos 1318
3 L'Eguille du Dru	7 Le Mont du Tour	11 La Vallee de Chamouny	15 Le G. du Tour	La hauteur a Chamouny 1480
4 Le Montanvert	8 Le Mont des Echaus	12 Le Glacier des Bois	16 Le G. de Trian	La hauteur de Montanvert Sur Chamouny 2447
				La hauteur de Mont Blanc 10954
				Le Mercure est descendu Sur le Montanvert de 3 Lignes

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Nous Jean François Payot Sindic
de la Commune de Chamonix, province de Faucigny,
Duché de Savoye, Royaume de Sardaigne,
Certifions à tous ceux qu'il appartiendra que
Monsieur John Auldjo gentilhomme
Ecossais accompagné de Six guides du lieu
est parti le 8 août courant mois à Sept heures
du matin pour la ascension du Montblanc, et
arrivé à quatre heures de l'après midi de la
même journée au lieu dit les grands mulets où
il a passé la nuit et que le lendemain à
Cinq heures du matin il est parvenu
à la Cime du Montblanc avec tous ses
guides, ainsi qu'il est notoire par le moyens
de plusieurs longues vues qui ont été
employées à cet effet par tout le peuple de
Chamonix, et qu'il est ensuite de retour
à son Hotel à Chamonix dans la même
journée à huit heures et demie du soir.
Délivré à Chamonix le 10 août 1827.

Payot, jean François Sindic
Simon Couttet Guide Chef

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ROUTES UP MONT-BLANC



Chamonix

St. Gervais

Five South

Annals of Mont-Blanc by C.E.Mathews



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